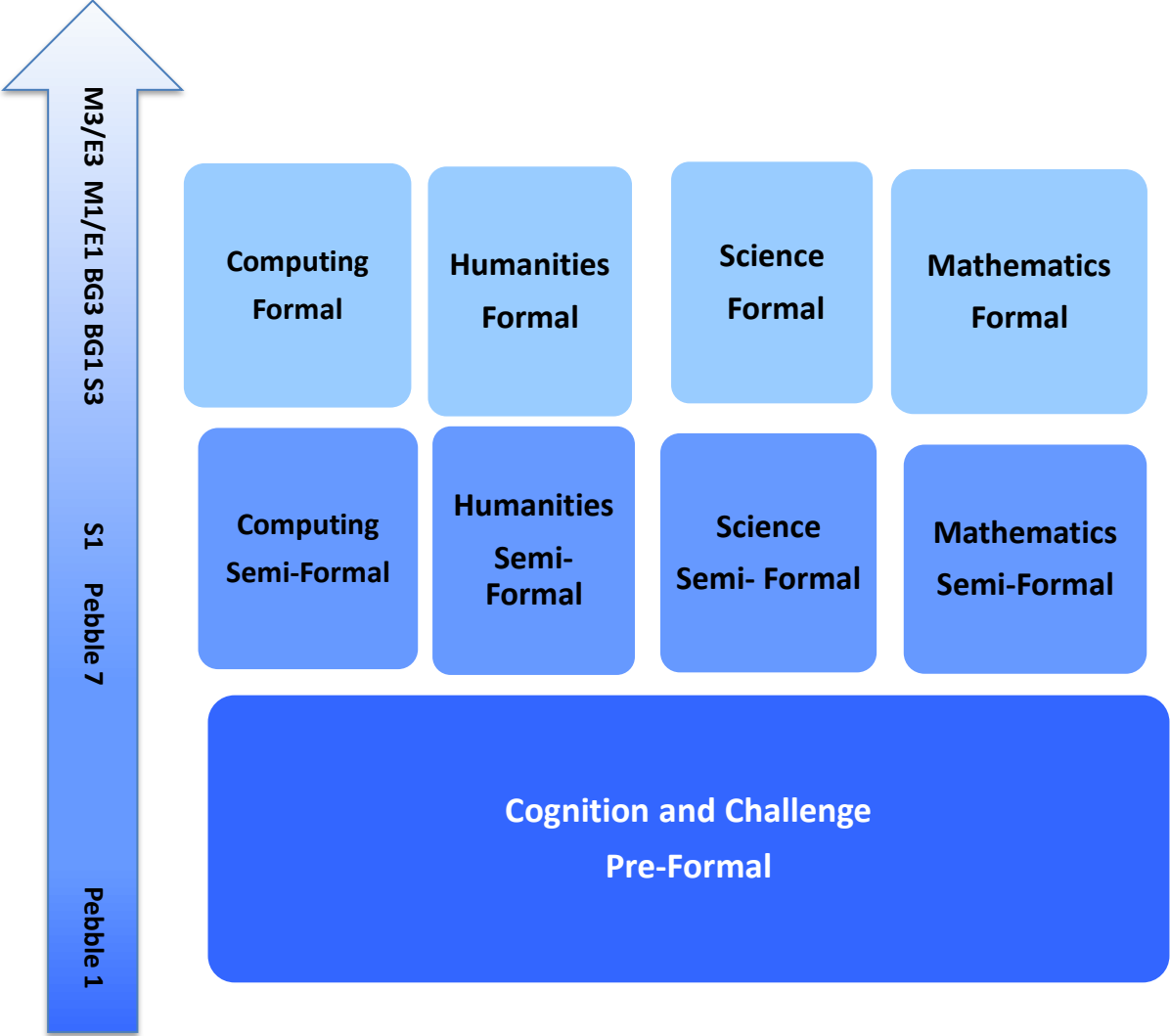


Cognition and Challenge Maths – Formal Curriculum

Cognition and Challenge



Cognition and Challenge

Formal Mathematics Curriculum

Cognition and Challenge

The Formal Pathway curriculum for Cognition and Challenge recognises that learners with moderate learning difficulties require a specialised approach to teaching and therefore there will be some differences in the design of the curriculum for these pupils. The formal curriculum at St Giles has been sub-divided into curricula for;

- Mathematics
- Science
- Computing
- Humanities – RE, History and Geography
- Modern foreign languages

Mathematics

Intent - What are we trying to achieve through our curriculum?

The Formal Maths curriculum:

- Is primarily accessible to those young people in the school with moderate learning difficulties.
- Is interconnected to encourage the transference of skills and knowledge across the learning pathway, aiming to embed maths across the whole curriculum.
- Is a planned programme of objectives, content, learning experiences, resources and assessment based on but not exclusive to the National Curriculum 2014.
- Where students are working below National Curriculum levels but above the EYFS criteria (Stepping Stones 1 to 3), Bridging Levels (1 to 3) framework by Croydon LEA have been produced to support planning and assessment for those young people who are working below year 1 of the National Curriculum, but are Mathematically secure at Stepping Stones 3.
- Views the development of mathematical skills as an important life skill and independence skill
- Ensures that learning about maths is linked to practical activities and consolidated and applied in practical sessions, including problem solving.

- Provides a combination of integrated approaches as well as discrete skills and subject specific content.
- Providing differentiated teaching and learning approaches which is tailored to the individual student so that they may be able to access the whole of the formal curriculum.
- Recognises that some of our learners may not be physically be able to complete practical processes without full support, but that they should be involved in choice and decision making about the process;
- Through collaboration with a range of other professionals is accessible to all learners as part of a bespoke provision of supported access and personalised approaches e.g. SaLT input in supporting non-verbal pupils to use high tech AAC devices to communicate about their learning
- Enables older pupils working at the formal level to pursue accreditation pathways (e.g. Entry Level awards and exams);

Aims;

We aim to ensure MLD learners have access to a formal mathematics curriculum that;

- Provides meaningful contexts for learning
- Should be given opportunities to take part in mathematical activities that are interesting and motivating to them,
- Use real-life materials, concrete resources, practical, first-hand, every day activities as a focus,
- To provide opportunities for learning experiences of real life maths situations, which will benefit the student at home and in the wider community to help provide skills as they prepare for Adulthood.
- Provides opportunities for play including number games, board games, construction toys, sorting games and number songs
- Recognises the importance of games as they are motivational, allow much repetition and are non-pressured,
- Have opportunities to maintain, reinforce and consolidate their skills,
- Includes activities that move beyond memory building activities to take part in supported thinking and problem-solving activities.
- Links and provides opportunities for generalising and applying skills and knowledge in other areas of the curriculum.

Curriculum Design;

Maths is taught through

- **Subject specific lessons – how often – daily?**
- **themed topics** delivered through termly cross curricular topics organised in cycles by the Middle and Upper Schools, providing opportunities for learners to link experiences to make connections.

Our maths curriculum is designed around the four key areas, as outlined in the National Curriculum.

These are **computer science, information technology, digital literacy** and **online safety**. The combination of these areas equips our learners with the ability to safely and confidently use a computer.

Implementation - How is our curriculum being delivered?

Curriculum Coverage

The semi-formal curriculum for mathematics recognises that mathematics is all around us and can therefore be developed through **all** curriculum areas and learning activities. Teaching maths through play and practical, everyday activities is motivating and engaging for pupils with severe learning difficulties. At the same time, we recognise that mathematics is a hierarchical subject and that it is therefore appropriate for teachers to work with pupils on specific mathematical skills and concepts to enable progression.

Learners from Year 3 onwards will be supported with;

NUMBER – Number and Place Value				
	Curriculum Content What the learner is learning.	What the adults working with the learner does.	Enabling Environment What is provided ?	Vocabulary
Bridging 1	<p>Rote Counting</p> <ul style="list-style-type: none"> Independently rote count to 20 Count back from 10 <p>Counting</p> <ul style="list-style-type: none"> Be able to count at least 20 objects accurately 1 by 1 Reliably count up to 10 objects that move or can't be seen (e.g. bubbles, 	<p>Rote Counting</p> <ul style="list-style-type: none"> Teach the learner to continue the rote count onwards in a game using dice and moving counters up to 20; Teach the learner to continue to say, sign or indicate the count aloud when an adult begins counting the first number. Model counting back from 10 by using such actions such as starting an event e.g. a movie or a class activity. <p>Counting</p> <ul style="list-style-type: none"> Teach the learner to count a range of every day motivating items e.g. candles on a cake, bricks in a tower suggest numbers that can be checked by counting, guess then count the number of: pupils in a group; adults in the room; cups needed at break time Count out objects and match t amounts to 20 this includes Numicon representations. Place objects on a number line to see that the more you have the more you have to count. 	<p>Number songs, stories, rhymes with Makaton signs also use objects.</p> <p>Washing line activities number lines</p> <p>Rote counting, one to one correspondence. Encourage touching the objects and placing them in a more organised way if possible. (in a line).</p> <p>Snack time giving out the right amount of snacks for each person. Making sandwiches.</p> <p>Register time</p>	See appendix

	<p>runners in a race, objects being dropped into a tin)</p> <ul style="list-style-type: none"> • Accurately count out a small number of objects from a larger group (e.g. count out twelve pieces of Lego from a box of bricks) • Apply counting skills 0-20 to play simple games and use in role play/life skills activities (contextual) • Show an understanding that the number items remain the same, even when rearranged. • Understand that the order in which a number of items are counted does not matter but that each object in a collection must be counted once <p>Recognising Representations</p> <ul style="list-style-type: none"> • Automatically recognise pictorial representation of numbers 1-10 e.g. dice and Numicon 	<ul style="list-style-type: none"> • Use counting to share from a larger group. E.g. give every child 5 blocks to count. • Look at different arrangements of the same amount and show that it still has the same amount. <p>Recognising representations</p> <ul style="list-style-type: none"> • Play dice games or dominoes see if they can tell you the number without counting the dots. <ul style="list-style-type: none"> • Use Numicon and observe whether they pick up the piece without counting the holes in the piece. <p>Compare and order</p> <ul style="list-style-type: none"> • Put out number cards from 1 to 10 and ask the child to place in order. Turn into a game and pretend that you dropped them and can you help them be sorted again. <ul style="list-style-type: none"> • When ordering the numbers to 20 show that the numbers 1 to 9 is exactly in the units of 11 to 19. So they can see the number pattern is the same except for the 1 in the ten. • Ask who has more/ less sweets Brian with 11 or Bronwyn with 16? • Ask what is the next number to 20 or the one before it. When counting backwards. This can be done through counting books. • Encourage using the correct mathematical vocabulary to help develop correct pedagogy. <p>Recognising and recording numerals</p> <ul style="list-style-type: none"> • teach the learner to put the correct number of objects in a pot when the number is present. <ul style="list-style-type: none"> • Model the sounds of 'teen' when counting above twelve and make sure the 'n' is sounded at the end. • Use drawing tools to enable the students to access the writing of numbers. model how to write the numbers and the correct direction of the numbers. • Encourage use of l-pad to write the numbers if handwriting is too difficult. Or even eye- pointing of the symbols first from a small group and then through larger ones. 	<p>Numicon kit 1 Patterns 2a/2b Numbers and number system 3a</p> <p>Numicon kit 1 Patterns 2a/2b Dice games, non-dice games including build a beetle, snakes and ladders, dominoes, fishing game, four in a row. Hungry, hungry hippos, skittles, matching activities etc.</p> <p>Attach objects onto a number line to show one to one correspondence. Putting objects in the holes of the Numicon to show number representation.</p> <p>Cooking activities, cake sales, Pattern making Role play and real life experiences e.g. virtual shopping catalogue or internet, Café</p> <p>Physical and other exercise and sports activities e.g. repetitive activities, scoring etc.</p> <p>Use tactile numbers or the physical shape of numbers to enable students VI to recognise them.</p> <p>Vocabulary sheet</p>	
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	<p>Compare and Order</p> <ul style="list-style-type: none">• Order numbers to 10 then 20 <i>e.g. place numbers correctly on a 0-10</i>• Compare two or more numbers up to a value of 10• Begin to use in context the language of more/less, bigger/smaller, the same• Know the number that is one more or one less than any given number to 10 then 20 <p>Recognising and recording Numerals</p> <ul style="list-style-type: none">• Recognise the numerals 1-10, then 1-20 in familiar contexts• Recognise and say/sign or indicate teen numbers correctly• Relate numerals 1-10 to a set of objects• Record legibly numerals 1-5, then 1-10 or use alternative representation as appropriate			
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<p>Bridging 2</p>	<p>Rote Counting</p> <ul style="list-style-type: none"> • Rote counting to 50 • Initiate counting from zero • Independently count from 1, then 0 to 30 • Starting from any given whole number count on to 20 • Count backwards from 20 to 0 • Notice some patterns when counting e.g. that the pattern repeats in every 10. 21 22 23 31 32 33 • Count from a single digit to any 30 <p>Recognising Representations</p> <ul style="list-style-type: none"> • Subtise up to 5 objects • Automatically recognise pictorial representation of numbers 0-10 • Recognise 0 as an empty set <p>Counting</p> <ul style="list-style-type: none"> • Count at least 30 objects accurately, one by one <p>Compare and Order</p> <ul style="list-style-type: none"> • Order numbers 0-30 • Know the number that is one more or one less than any given number to 30 	<p>Rote Counting</p> <ul style="list-style-type: none"> • Teach the learner to continue the rote count onwards in a game using dice and moving counters up to 50; • Start to bring in Zero as a number when you have nothing on the table or on the tray before counting. • Teach the learner to continue to say, sign or indicate the count aloud when an adult begins counting from the first number e.g. I know I have 5 Lego bricks but I need 20 so here is 6,7,8... • Model counting back from 20 by using such actions such as starting an event e.g. a movie or a class activity. • When ordering the numbers to 50 show that the numbers 1 to 9 is exactly in the units of 11 to 19. So they can see the number pattern is the same except for the 1 in the ten. This pattern of 0 to 9 continues to 50. <p>Recognising representations</p> <ul style="list-style-type: none"> • Play dice games or dominoes see if they can tell you the number without counting the dots. • Use Numicon and observe whether they pick up the piece without counting the holes in the piece. • Encourage estimation of objects for each child to 5, e.g. for a drink for each person in the group you can ask do we have enough for each person? • Begin to encourage place value games as a better way of counting by grouping into tens and units. This can be the start of place value understanding. <p>Counting</p> <ul style="list-style-type: none"> • Teach the learner to count a range of every day motivating items e.g. candles on a cake, bricks in a tower to 30. • suggest numbers that can be checked by counting, • guess then count the number of: pupils in a group; adults in the room; cups needed at break time • Count out objects and match t amounts to 30 this includes Numicon representations. • Place objects on a number line to see that the more you have the more you have to count. <p>Compare and order</p> <ul style="list-style-type: none"> • Put out number cards from 1 to 30 and ask the child to place in order. Turn into a game and pretend that you dropped them and could you help sort them again? • Ask who has more/ less sweets Brian with 11 or Bronwyn with 16? Encourage to use consistent but correct vocabulary 	<p>Number songs, stories, rhymes with Makaton signs also use objects. You tube clips, espresso Washing line activities</p> <p>Use ICT based software e.g. Busy things. number lines</p> <p>Rote counting, one to one correspondence. Encourage touching the objects and placing them in a more organised way if possible. (in a line).</p> <p>Snack time giving out the right amount of snacks for each person. Making sandwiches.</p> <p>Register time</p> <p>Numicon kit 1 Patterns 2a/2b Numbers and number system 3a</p> <p>Numicon kit 1 Patterns 2a/2b Dice games, non-dice games including build a beetle, snakes and ladders, dominoes, fishing game, four in a row. Hungry, hungry hippos, skittles, matching activities etc.</p> <p>Attach objects onto a number line to show one to one correspondence. Putting objects in the holes of the Numicon to show number representation.</p> <p>Cooking activities, cake sales, Pattern making Role play and real life experiences e.g. virtual shopping catalogue or internet, Café</p> <p>Physical and other exercise and sports activities e.g. repetitive activities, scoring etc.</p>	<p>See appendix</p>
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	<ul style="list-style-type: none"> Compare two or more numbers up to a value of 20 <p>Recognising and recording Numerals</p> <ul style="list-style-type: none"> Recognise and name 'ty' numbers and relate to sets of objects (Check that pupils can clearly pronounce and discriminate between 'teen' and 'ty' numbers) Demonstrate understanding that although teens numbers are spoken with the number of units first i.e. 'fourteen' they are written with the tens first i.e. '14' <p>Place Value</p> <ul style="list-style-type: none"> Show early understanding of place value e.g. use practical apparatus to represent teen numbers 	<ul style="list-style-type: none"> Ask what is the next number to 20 or the one before it. When counting backwards. This can be done through counting books. Encourage using the correct mathematical vocabulary to help develop correct pedagogy. <p>Recognising and recording numerals</p> <ul style="list-style-type: none"> teach the learner to put the correct number of objects in a pot when the number is present. Model the sounds of 'teen' when counting above twelve and make sure the 'n' is sounded at the end. Introduce tens and model the 'ty' at the end of counting in tens. Use drawing tools to enable the students to access the writing of numbers. model how to write the numbers and the correct direction of the numbers. Encourage use of I-pad to write the numbers if handwriting is too difficult. Or even eye- ointing of the symbols first from a small group and then through larger ones. <p>Place Value</p> <ul style="list-style-type: none"> Show how grouping in tens make it easier to count objects Begin to use ten as a place holder by using base ten or Numicon to show number representation. 	<p>Place value counting game. Use dice to encourage counting and adding on. To make counting easier you could group the amounts in tens and swap for a larger block. Use tactile numbers or the physical shape of numbers to enable students VI to recognise them.</p> <p>Vocabulary sheet</p>	
Bridging 3	<p>Rote Counting</p> <ul style="list-style-type: none"> Rote count up to 100 Begin to rote count in 2s up to 20 Rote count in 5s to 50. Begin to rote count in 10's to 100 	<p>Rote Counting</p> <ul style="list-style-type: none"> Teach the learner to continue the rote count onwards in a game using dice and moving counters up to 100; Begin to model rote counting to students by showing examples. E.g. counting socks in groups of 2's, the number of fingers in groups of 5's, Number of tens with 10 pence for coin value. Can count forwards or backwards. Use number lines/ number squares to look at patterns when seeing numbers above 20. 	<p>Number songs, stories, rhymes with Makaton signs also use objects. You tube clips, espresso Washing line activities Use ICT based software e.g. Busy things. number lines Rote counting, one to one correspondence. Encourage touching the objects and placing them in a more organised way if possible. (in a line).</p> <p>Snack time giving out the right amount of snacks for each person. Making sandwiches.</p>	See Appendix

	<ul style="list-style-type: none"> Count forward and back in 10's from a given multiple of 10. Recognise and identify the patterns when reciting numbers above 20 From any given whole number count to a number up to 50. Independently count from 1, then 0 to 50 Count back 50 to 0. Begin to rote count in tens to 100; 10, 20, 30, 40... <p>Recognising Representations</p> <ul style="list-style-type: none"> Recognise 0 as an empty set <p>Counting</p> <ul style="list-style-type: none"> Group in tens and ones when counting larger sets of objects <p>Compare and Order</p> <ul style="list-style-type: none"> Be able to compare numerals and be able to say which is smaller/bigger Be able to order 3 numbers from smallest to biggest and biggest to smallest 	<ul style="list-style-type: none"> Model counting back from 50 by using such actions such as starting an event. When ordering the numbers to 50 show that the numbers 1 to 9 is exactly in the units of 11 to 19. So they can see the number pattern is the same except for the 1 in the ten. This pattern of 0 to 9 continues to 50. <p>Recognising representations</p> <ul style="list-style-type: none"> Play dice games or dominoes see if they can tell you the number without counting the dots. Use Numicon and observe whether they pick up the piece without counting the holes in the piece. Encourage estimation of objects for each child to 5, e.g. for a drink for each person in the group you can ask do we have enough for each person? Begin to encourage place value games as a better way of counting by grouping into tens and units. This can be the start of place value understanding. <p>Counting</p> <ul style="list-style-type: none"> Teach the learner to count a range of every day motivating items e.g. candles on a cake, bricks in a tower to 30. suggest numbers that can be checked by counting, guess then count the number of: pupils in a group; adults in the room; cups needed at break time Count out objects and match t amounts to 30 this includes Numicon representations. Place objects on a number line to see that the more you have the more you have to count. <p>Compare and order</p> <ul style="list-style-type: none"> Put out number cards from 1 to 30 and ask the child to place in order. Turn into a game and pretend that you dropped them and could you help sort them again? <ul style="list-style-type: none"> Give each child a number and s if they can put them in order. Ask who has more/ less sweets Brian with 11 or Bronwyn with 16? Encourage to use consistent but correct vocabulary Ask what is the next number to 20 or the one before it. When counting backwards. This can be done through counting books. Encourage using the correct mathematical vocabulary to help develop correct pedagogy. <p>Recognising and recording numerals</p> <ul style="list-style-type: none"> teach the learner to put the correct number of objects in a pot when the number is present. 	<p>Register time</p> <p>Numicon kit 1Patterns 2a/2b Numbers and number system 3a</p> <p>Numicon kit 1 Patterns 2a/2b Dice games, non-dice games including build a beetle, snakes and ladders, dominoes, fishing game, four in a row. Hungry, hungry hippos, skittles, matching activities etc.</p> <p>Attach objects onto a number line to show one to one correspondence. Putting objects in the holes of the Numicon to show number representation.</p> <p>Cooking activities, cake sales, Pattern making Role play and real life experiences e.g. virtual shopping catalogue or internet, Café</p> <p>Physical and other exercise and sports activities e.g. repetitive activities, scoring etc.</p> <p>Place value counting game. Use dice to encourage counting and adding on. To make counting easier you could group the amounts in tens and swap for a larger block.</p> <p>Use tactile numbers or the physical shape of numbers to enable students VI to recognise them. See appendix</p> <p>Vocabulary sheet</p>	
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	<p>Recognising and recording numerals</p> <ul style="list-style-type: none"> Understand the relationship between ordinal and cardinal numbers in practical activities Recognise numerals 0-100 in different contexts Record legibly most numerals 1-20 or use alternative representation as appropriate <p>Place Value</p> <ul style="list-style-type: none"> Represent 2 digit numbers using apparatus Understand that –ty signifies ‘tens’ and that ‘twenty’ is worth two tens and ‘thirty’ is worth three tens Recognise multiples of ten as ‘landmark’ numbers 	<ul style="list-style-type: none"> Model the sounds of ‘teen’ when counting above twelve and make sure the ‘n’ is sounded at the end. Introduce tens and model the ‘ty’ at the end of counting in tens. Use drawing tools to enable the students to access the writing of numbers. Model how to write the numbers and the correct direction of the numbers. Encourage use of I-pad to write the numbers if handwriting is too difficult. Or even eye-dotting of the symbols first from a small group and then through larger ones. <p>Place Value</p> <ul style="list-style-type: none"> Show how grouping in tens make it easier to count objects Begin to use ten as a place holder by using base ten or Numicon to show number representation. 		
<p>Milestone 1</p>	<ul style="list-style-type: none"> Count to & across 100, forwards & backwards, beginning with 0 or 1, or from any given number Count, read & write numbers to 100 in numerals Count in multiples of twos, fives & tens to 100 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> <i>Engage in mathematical and everyday activities that involve counting as both reciting numbers and enumerating objects</i> <i>Count to and order to 100, beginning with 0 or 1, or from any given number using the language of more than, less than and between</i> <i>Subitise a small number</i> <i>Estimate a small number and check by counting or grouping</i> <i>Use recognition of a familiar pattern, e.g. on dice, to support estimation, then check by counting</i> 	<p>Number songs, stories, rhymes with Makaton signs also use objects. You tube clips, espresso Washing line activities Use ICT based software e.g. Busy things. number lines Rote counting, one to one correspondence. Encourage touching the objects and placing them in a more organised way if possible. (in a line).</p>	<p>See Appendix</p>

	<ul style="list-style-type: none"> Given a number, identify one more & one less Identify & represent numbers using objects & pictorial representations including the number line Use the language of: equal to, more than, less than (fewer), most, least Read & write numbers from 1 to 20 in numerals & words 	<ul style="list-style-type: none"> Use ordinal language when ordering numbers or objects and events (e.g., 1st, 2nd, 3rd...) Count in twos, fives and tens, including from different multiples – Numicon can be used to help demonstrate and model the process Count to and across multiples of 10/10 boundaries Begin to use counting skills to recognise patterns in numbers Recognise odd and even numbers Exchange, say, 14 ones for 1 ten and 4 ones when counting, including using coins or structured place value materials. Begin to recognise the value of each digit in any two-digit number. Understand the distinct structure of the ‘teen’ numbers. Understand ‘teens’ numbers can be grouped as one ten and some units Begin to partition numbers using place value cards and other resources. Use place value to understand the difference between teen numbers and –ty numbers (e.g. thirteen, thirty) Use a calculator to confirm that numbers such as 57 are made up of 50 and 7 ones, and to develop their understanding of place value. Generate equivalent statements using the equals sign, e.g. $7 = 6 + 1 = 8 - 1$. Move to calculation? Confidently read and write numbers from 1 to 20 in numerals and use this knowledge when recording problems Place numbers on a number line in a range of contexts. Begin to recognise place value in numbers beyond 20 by reading, writing, counting & comparing numbers up to 100, supported by objects & pictorial representations Use vocabulary of place value Models how to use Base 10 to show tens and units. 10 blocks can represent 1 stick. Model Numicon to show tens and units using the 10’s and ones 	<p>Snack time giving out the right amount of snacks for each person. Making sandwiches.</p> <p>Register time</p> <p>Numicon kit 1 Patterns 2a/2b Numbers and number system 3a</p> <p>Numicon kit 1 Patterns 2a/2b Dice games, non-dice games including build a beetle, snakes and ladders, dominoes, fishing game, four in a row. Hungry, hungry hippos, skittles, matching activities etc.</p> <p>Attach objects onto a number line to show one to one correspondence. Putting objects in the holes of the Numicon to show number representation.</p> <p>Cooking activities, cake sales, Pattern making Role play and real life experiences e.g. virtual shopping catalogue or internet, Café</p> <p>Physical and other exercise and sports activities e.g. repetitive activities, scoring etc.</p> <p>Place value counting game. Use dice to encourage counting and adding on. To make counting easier you could group the amounts in tens and swap for a larger block.</p> <p>Use tactile numbers or the physical shape of numbers to enable students VI to recognise them. Vocabulary sheet</p>	
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<p>Milestone 2</p>	<ul style="list-style-type: none"> • Read and write numbers to at least 100 in numerals and words • Count in steps of 2, 3 and 5 from 0, and in 10s from any number to 100, forwards and backwards • Count in multiples of 3 to at least 30 • Recognise the place value of each digit in a two-digit number (tens, ones) • Use place value to compare and order numbers up to 100 sometimes using less than (<), equals (=) and greater than (>) signs correctly • Identify and represent numbers using different representations including the number line • Reason about place value and number facts and use them to solve problems 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • Count on & back in ones and tens within 0 - 100 from any 2-digit number • Know which number comes before and after any number in the counting range • Know which numbers fall between non-consecutive numbers • Make own choices about how to estimate and count larger amounts of objects • Group objects to count reliably • Begin to work with larger numbers to develop further their recognition of patterns within the number system and represent them in different ways, including spatial representations • Describe patterns and relationships involving number e.g. given the sequence $6 + 5 = 11$, $16 + 5 = 21$, $26 + 5 = 31$, use the patterns in the calculations to predict what comes next then check prediction • Investigate a general statement such as: 'When you add 5 to any number ending in 3, the answer ends in 8' • Recognise and describe sequences, e.g. continuing the sequence 73, 63, 53, 43, ... by counting back in tens • Know which numbers are odd or even to at least 30, and answer questions such as: 'What even numbers lie between 15 and 20?' • Recognise two-digit multiples of 10, 5 or 2, knowing, e.g. that 65 is a multiple of 5 but not of 10 or 2, and that 38 is a multiple of 2 but not of 5 or 10 – Change the term multiple to within the number patterns as the term multiple is used at M3. • Use developing understanding of place value to compare and order numbers • Compare and order numbers up to 100 and use signs <, >, and = and understand their role in a number sentence e.g. $6 > 3$. • Using understanding of place value and multiples of ten, to estimate the position of a number e.g. on a number line • Say which no. is 10 more or less than any given number, beginning to bridge across the hundred boundary • Understand term 'multiple of ten' • Say the next and previous multiple of ten of any number to 100 – (Multiple?) • Understand the quantity value and the column value of 2-digit number names • Use different representations to demonstrate emerging understanding of place value e.g. Dienes apparatus, number square etc & begin to understand zero as a place holder • Understand that when ten (or a multiple of ten) is added to a number the units ones digit stays the same and explain why - When counting in steps of ten. • Partition numbers in different ways (e.g. $23 = 20 + 3$ and $23 = 10 + 13$) 	<p>Rhymes with Makaton signs also use objects. You tube clips, espresso Washing line activities Use ICT based software e.g. Busy things. number lines Rote counting, one to one correspondence. Encourage touching the objects and placing them in a more organised way if possible. (in a line).</p> <p>Snack time giving out the right amount of snacks for each person. Making sandwiches.</p> <p>Register time</p> <p>Numicon kit 1 Patterns 2a/2b Numbers and number system 3a</p> <p>Numicon kit 1 Patterns 2a/2b Dice games, non-dice games including build a beetle, snakes and ladders, dominoes, fishing game, four in a row. Hungry, hungry hippos, skittles, matching activities etc.</p> <p>Attach objects onto a number line to show one to one correspondence. Putting objects in the holes of the Numicon to show number representation.</p> <p>Cooking activities, cake sales, Pattern making Role play and real life experiences e.g. virtual shopping catalogue or internet, Café</p> <p>Physical and other exercise and sports activities e.g. repetitive activities, scoring etc.</p>	<p>See Appendix</p>
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		<ul style="list-style-type: none"> • Use of Apparatus e.g. base ten or Numicon would be beneficial to understand the place value addition of a ten to a one. • Examples of problem of solving include when counting in 2's, 5's and 10's which number what will the ones be every time. 	<p>Place value counting game. Use dice to encourage counting and adding on. To make counting easier you could group the amounts in tens and swap for a larger block.</p> <p>Use tactile numbers or the physical shape of numbers to enable students VI to recognise them.</p> <p>Vocabulary sheet</p>	
Milestone 3	<p>Count from 0 in multiples of 4, 8, 50 & 100</p> <ul style="list-style-type: none"> • Find 10 or 100 more or less than a given number • Compare & order numbers up to 1 000 • Identify, represent & estimate numbers using different representations • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Read & write numbers up to 1000 in numerals & in words • Solve number problems & practical problems involving these ideas 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • <i>Use multiples of 2, 3, 4, 5, 8, 10, 50 and 100</i> • <i>Using a variety of representations, including those related to measures, continue to count in ones, tens and hundreds, developing fluency in the order and place value of numbers to 1000</i> • <i>Develop an understanding of the relationship between different sets of multiples e.g. using their understanding of the relationship between 2, 4 & 8 to count from zero in steps of 4 & 8</i> • <i>Count on from & back to zero using multiples of 10 & use this to give the number that is the multiple of 10 or 100 more or less than any three-digit number. Use understanding of counting in steps of 5 & 10 to count in steps of 50 & 100. Use the patterns & results to help derive & recall the associated facts in the corresponding times-tables</i> • <i>Position numbers on a number line & round two- & three-digit numbers to the nearest 10 or 100</i> • <i>Use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems, building on work in year 2 (e.g. $146 = 100 + 40$ and $6, 146 = 130 + 16$)</i> • <i>Use understanding of place value to show, for instance, that 400 more than 387 is 787, 40 more than 387 is 427 & 4 more than 387 is 391. Carry out a similar process for subtraction</i> 	<p>Numicon to help visualise patterns of 4 or 8,</p> <p>Use Coins for patterns of 50's</p> <p>Use Base 10 the 100 square to help with counting in 100's</p> <p>You tube clips, espresso</p> <p>Washing line activities</p> <p>Use ICT based software e.g. Busy things.</p> <p>number lines</p> <p>Rote counting, one to one correspondence.</p> <p>Encourage touching the objects and placing them in a more organised way if possible. (in a line).</p> <p>Numicon kit 1 Patterns 2a/2b Numbers and number system 3a</p> <p>Numicon kit 1 Patterns 2a/2b</p> <p>Attach objects onto a number line to show one to one correspondence.</p> <p>Putting objects in the holes of the Numicon to show number representation.</p> <p>Cooking activities, cake sales,</p> <p>Pattern making</p> <p>Role play and real life experiences e.g. virtual shopping catalogue or internet, Café</p> <p>Vocabulary sheet</p>	See Appendix

<p>Milestone 4</p>	<ul style="list-style-type: none"> Count in multiples of 6, 7, 9, 25 & 1000 Find 1000 more or less than a given number Count backwards through zero to include negative numbers Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, & ones) Order & compare numbers beyond 1000 Identify, represent & estimate numbers using different representations Round any number to the nearest 10, 100 or 1000 Solve number & practical problems that involve all of the above & with increasingly large positive numbers Read Roman numerals to 100 (I to C) & know that over time, the numeral system changed to include the concept of zero & place value 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> Position positive & negative numbers on a number line, e.g. to order a set of temperatures. Use developing knowledge of negative numbers to count back through 0. Write inequalities in the context of negative/positive numbers using the signs < & >, e.g. $-3 < +5$ & $-5 < -3$. Know that any negative number is less than any positive number. Generate number sequences given the start number & the whole-number step size, using a grid or number line to continue the sequence on & back. Investigate the possible size of the step if, e.g. the fourth number is 11 & the eighth number is 23. Extend & use understanding of place value to order & compare larger numbers beyond 1000 using a variety of measures including measures Use this understanding count in tens and hundreds and to add or subtract multiples of 1, 10, 100 or 1000 to or from any four-digit whole number & to partition the numbers in different ways Extend knowledge of the number system to include the decimal numbers and fractions met so far Understand the importance of zero as a place holder in numbers such as 2036, partitioning it as $2000 + 30 + 6$ & $1900 + 100 + 20 + 16$ Develop understanding that other number systems represent numbers in different ways; & that some earlier number systems (including Roman numerals) did not include the concept of zero & place value. Extend knowledge of Roman numerals beyond those seen on a clock face in order to read Roman numerals to 100. Develop an understanding of the purpose of rounding numbers & estimation e.g. making links with the use of measuring instruments. Round numbers to support estimation & use understanding of place value to round numbers to the nearest 10, 100 or 1000 	<p>Numicon to help visualise patterns of 6,7 and 9</p> <p>Use Coins for patterns of 25's</p> <p>Use Base 10 the 1000 cube to help with counting in 1000's You tube clips, espresso Washing line activities Use ICT based software e.g. Busy things. number lines Rote counting, one to one correspondence. Encourage touching the objects and placing them in a more organised way if possible. (in a line).</p> <p>Numicon kit 1 Patterns 2a/2b Numbers and number system 3a</p> <p>Numicon kit 1 Patterns 2a/2b</p> <p>Attach objects onto a number line to show one to one correspondence. Putting objects in the holes of the Numicon to show number representation.</p> <p>Cooking activities, cake sales, Pattern making Role play and real life experiences e.g. virtual shopping catalogue or internet, Café</p> <p>Vocabulary sheet</p>	<p>See Appendix</p>
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NUMBER – Calculations (Addition and Subtraction) (multiplication and division)

	Curriculum Content What the learner is learning	What the adults working with the learner does	Enabling Environment What is provided?	Vocabulary
<p>Bridging 1</p>	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> Makes two equal sets of objects 	<p>The adult supports the learner to:</p> <p><u>Addition and subtraction</u></p> <ul style="list-style-type: none"> Encourage the student to make two sets of groups with equal amounts Encourage the students to look at two groups and see which group has the greater amount and which group has the least amount. 	<p>Use objects to make equal sets e.g. blocks Use bowls or other containers as a vessel for objects</p> <p>Numicon</p> <p>Symbols to show number sentences and more or less</p>	<p>See appendix</p>

	<ul style="list-style-type: none"> • Compare two amounts to see which is greater or less. • Begin to realise that combining objects gives you a greater amount and taking away gives you a smaller amount • Begin to use own methods to record combining two sets • In practical context record simple addition problems up to 6 • Partition and combine sets of objects from 1 to 6 <p>Multiplication and Division</p> <ul style="list-style-type: none"> • Group and share up to 6 objects in practical situations. • Consolidate one to one correspondence in practical situations. • Join in simple practical sharing activities • Begin to understand the concept of fair sharing. 	<ul style="list-style-type: none"> • Show the students that everytime you combine amount you will end up with more than you had before. • Show that when you take away from a group of objects you will end up with less than you had before. • Use different techniques including symbol and pencil marking to begin to record simple addition of small amounts. Then begin to build this into simple number sentences. • Learn to both partition amounts and combine amounts to amounts up to 6. Use physical objects to visualize the process and the potential patterns. Show that in a partition when one side increases the other must decrease. <ul style="list-style-type: none"> • Use appropriate vocabulary to encourage recognition of correct pedagogy <p><u>Multiplication and division</u></p> <ul style="list-style-type: none"> • Learn to share equally by dividing 6 objects in a variety of ways. Make sure they are shared equally. • Make sure that the students are aware of one to one correspondence when sharing. “ one for me one for you” • Use appropriate vocabulary to encourage recognition of correct pedagogy 	<p>Paper</p> <p>ICT: Busythings, Twinkl, etc.</p> <p>Base 10</p> <p>Vocabulary list</p>	
Bridging 2	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> • Use the equal signs to represent equivalence between two equal sets of objects 	<p>The adult supports the learner to:</p> <p><u>Addition and subtraction</u></p> <ul style="list-style-type: none"> • <i>Encourage the students to use the equals sign to show that one side will be the same/equals the other side. This could be done with objects, balances or when writing simple number sentences. Symbols may be useful here.</i> 	<p>Use objects to make equal sets e.g. blocks</p> <p>Use bowls or other containers as a vessel for objects</p> <p>Numicon</p> <p>Symbols to show number sentences and more or less</p>	See Appendix

	<ul style="list-style-type: none"> • Use the language related to addition and subtraction e.g. more than, less than • Know that putting two groups of objects together makes a greater amount and removing objects from a group makes a smaller amount • Begin to make a plausible estimation and check when using addition and subtraction to 6 • Combine two small sets of objects or visual aids to 6 • In practical context record simple addition and subtraction problems to 6 • Use number stories related to number bonds to 5. • Use objects to show number bonds to 5 <p>Multiplication and Division</p> <ul style="list-style-type: none"> • Introduce language such as ‘lots of’, ‘groups of’ and sets of.’ • Group up to 6 objects into sets of one, two or three. • Share up to six objects equally between 1, 2 and 3 sets and recognise that each quantity is the same. 	<ul style="list-style-type: none"> • <i>When using language related to addition and subtraction use consistent language to enable the student to understand the meaning and how it is used. This will help build vocabulary.</i> • <i>They can understand that adding to a group gives you more and taking away from a group gives you less. This will be shown from their estimations to ensure their understanding. “how many do you think will be left?”</i> • <i>To encourage more independent thinking when combining a set of objects both physically or visually.</i> • <i>Encourage recording of number sentences by using numbers and signs when showing simple addition and subtraction sums.</i> • <i>Show number bonds from 1 to 5 in the form of objects e.g. Numicon/ blocks, number stories. Etc.</i> <p><u>Multiplication and division</u></p> <ul style="list-style-type: none"> • Use the language associated with multiplication including ‘lots of’, ‘groups of’ and ‘sets of’. Keep using consistent language. • Encourage more consistent sharing equally by dividing 6 objects in a variety of ways. Make sure they are shared equally. • Make sure that the students are aware of one to one correspondence when sharing. “one for me one for you” • Use appropriate vocabulary to encourage recognition of correct pedagogy. • Understand that they are aware of the term fair sharing and use when sharing out consistently. 	<p>Paper</p> <p>ICT: Busythings, Twinkl, etc.</p> <p>Base 10</p> <p>Vocabulary list</p>	
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	<ul style="list-style-type: none"> Demonstrate an understanding of 'fair sharing'. 			
Bridging 3	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> Make a plausible estimation and check when using addition and subtraction to 10 Combine two small sets of objects or visual aids up to 10 by counting on Begin to increase an amount by adding to it e.g. there are 4 children on the bus and 3 get on. How many on the bus now? Within 10, remove objects from a given set and accurately count how many are left. To begin to recognise and use the symbols '+', '-', and '='. To mentally recall number bonds to 5. To use objects to show number bonds to 10 and relate to subtraction facts e.g. 7 and 3 equals 10; 10 take away 3 equals 7. <p>Multiplication and Division</p>	<p>The adult supports the learner to:</p> <p>Addition and subtraction</p> <ul style="list-style-type: none"> Ask the students do you think your calculations are correct. Make sure that they are able to think if their answers are reasonable and to double check. Encourage the students to count on when combining objects or visual problems up to 10. Encourage and model writing number sentences with symbols '+', '-', and '='. Encourage students to recall their number bonds to 5 when answering questions Demonstrate using objects the number bonds to 10 and show how removing one effects the other by gaining one. Relate number bonds to number facts e.g. 6 and 4 gives 10 and 10 take away 6 gives 4. <p>Multiplication and division</p> <ul style="list-style-type: none"> Show how we begin to group and share up to ten objects equally. Make sure they check to make sure that they are equal. Make sure consistent language is used for the use of multiplication and division, Begin to encourage counting in sets of 2's in practical situations up to 10. 2 ears on one head how many ears do 4 heads have. Or how many socks do 5 people have. 	<p>Use objects to make equal sets e.g. blocks Use bowls or other containers as a vessel for objects</p> <p>Numicon</p> <p>Symbols to show number sentences and more or less</p> <p>Paper</p> <p>ICT: Busythings, Twinkl, etc.</p> <p>Base 10</p> <p>Vocabulary list</p> <p>Use real life problems to show real life problems</p> <p>Vocabulary sheet</p>	See Appendix

	<ul style="list-style-type: none"> Group and share up to 10 objects in practical situations. Use language such as 'lots of', 'groups of' and sets of.' Use language such as 'sharing', 'equal', 'same', 'fair'. Making sets of 2's and counting how many there are (in 2's) up to 10. E.g. how many ears do 5 people have? How many wheels on three bikes? 			
<p>Milestone 1</p>	<ul style="list-style-type: none"> Understanding operations and the relationships between them Read, write & interpret mathematical statements involving addition (+), subtraction (-) & equals (=) signs <p>Mental methods</p> <ul style="list-style-type: none"> Represent & use number bonds & related subtraction facts within 20 Add & subtract one-digit & two-digit numbers to 20, including zero <p>Solving numerical problems</p> <ul style="list-style-type: none"> Solve one-step problems that involve addition & subtraction, using concrete objects & pictorial representations, & missing number problems such as $7 = ? - 9$ Solve one-step problems involving multiplication & division, by calculating the answer using concrete objects, pictorial representations & arrays with the support of the teacher 	<p>The adult supports the learner to:</p> <p>Addition and subtraction</p> <ul style="list-style-type: none"> Combine & increase numbers, counting forwards & backwards Discuss & decide whether to put the larger number first & count on or back Know & reason with number bonds & related subtraction facts to 10 in several forms (e.g. $2 + 7 = 9$; $9 - 2 = 7$; $7 = 9 - 2$) Understand in practical contexts that adding or subtracting zero does not affect the total Understand that + can be done in any order Understand subtraction as 'taking away' objects from a set & finding how many are left Compare two sets to find a numerical difference Begin to understand that addition & subtraction are related operations Recognise & begin to use mathematical symbols e.g. addition (+), subtraction (-) and equals (=) signs Explain that things on both sides of the equals sign have the same value Know that the 'total' can be presented on either side of the equals sign Use practical apparatus to complete missing number problems Apply knowledge to problems; e.g. they work out how many biscuits are left on a plate of 19 biscuits if 5 are eaten 	<p>Use objects to make equal sets e.g. blocks Use bowls or other containers as a vessel for objects</p> <p>Numicon</p> <p>Symbols to show number sentences and more or less</p> <p>Paper</p> <p>ICT: Busythings, Twinkl, etc.</p> <p>Base 10</p> <p>Vocabulary list</p> <p>Show real life problems</p> <p>Vocabulary sheet</p>	<p>See Appendix</p>

		<p><u>Multiplication and division</u></p> <ul style="list-style-type: none"> • <i>Through grouping & sharing small quantities, begin to understand: multiplication & division; doubling numbers & quantities; & finding simple fractions of objects, numbers & quantities</i> • <i>Carry out practical tasks that involve sharing objects into equal groups to solve problems such as: 'How many pencils are on each table if there are 4 tables & 12 pencils?' or 'How many 1p coins will two children each get when there are twelve 1p coins to share out?' Find combinations of groups of equal numbers of objects, such as working out the total number of blocks if there are three groups of five blocks, & count in fives to check</i> 		
<p>Milestone 2</p>	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> • Recall and use addition and subtraction facts for all numbers up to 10 fluently • Relate number facts to 10 to adding and subtracting multiples of 10 within 100 • Begin to recall addition and subtraction facts to 20 • Add and subtract numbers mentally, including: <ul style="list-style-type: none"> • a 2-digit number and 1s • a 2-digit number and 10s • 2 simple, 2-digit numbers, which do not involve bridging a 10 • Any 2, 2-digit numbers • adding 3 single-digit numbers • Add and subtract numbers using objects, pictorial representations and the written columnar methods including: <ul style="list-style-type: none"> • a 2-digit number and 10s <ul style="list-style-type: none"> • adding 2, 2-digit numbers • simple cases of subtracting 2-digit numbers • adding 3 single-digit numbers • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing 	<p><u>Addition and subtraction</u></p> <p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • Use the language of addition and subtraction accurately e.g., read $19 + 15 = 34$ as 'nineteen plus fifteen equals thirty-four' and $16 - 4 = 12$ as 'sixteen minus four equals twelve' • Know that addition and subtraction are inverse operations and state the subtraction calculation corresponding to a given addition calculation and vice versa, and use to check answers; e.g., to confirm $24 - 7 = 17$, add 17 and 7 • Use knowledge of number facts to add or subtract mentally a one-digit number or a multiple of 10 to or from any two-digit number • Discuss and decide whether to: put the larger number first and count on or back; look for ways to make 10 or 20; or partition and count through multiples of 10 using them as milestones e.g. recognise that $8 + 23$ is $23 + 7 + 1$ • Use number lines and jottings to help in carrying out calculations e.g., for the calculation $24 - 7$, subtract 4 and then 3, noting the steps taken • Use knowledge of number facts to respond to questions such as: 'I have 40p. How much more do I need to buy a comic that costs £1?' • Begin to use understanding of place value to record addition and subtraction in columns • Interpret and solve increasingly complex one-step and two-step problems, such as: 'Apples cost 40p each. You have 90p and you buy two apples. How much money do you have left?' They record number sentences to show their method, for example: $40 + 40 = 80$ $90 - 80 = 10$ I have 10p left • Use inverse operations to solve missing number problems for addition and subtraction (e.g. given $9 + 5 = 14$, complete $14 - \square = 9$ and $\square - 9 = 5$) <p><u>Multiplication and division</u></p>	<p>Use objects to make equal sets e.g. blocks Use bowls or other containers as a vessel for objects</p> <p>Numicon</p> <p>Symbols to show number sentences and more or less</p> <p>Paper</p> <p>ICT: Busythings, Twinkl, etc.</p> <p>Base 10 for demonstrating adding and subtracting using physical objects for tens and ones</p> <p>Vocabulary list Number lines to 100. Use real life problems to help solve problems to 100.</p> <p>100 square for multiplication patterns</p> <p>Vocabulary sheet</p>	<p>See Appendix</p>

	<p>number problems at least involving a 2-digit number and 1s or 10s</p> <ul style="list-style-type: none"> • Solve simple 2-step problems with addition and subtraction, applying increasing knowledge of mental and written methods • Show that subtraction can't be done in any order <p>Multiplication and Division</p> <ul style="list-style-type: none"> • Recall and use multiplication and division facts for the 10 multiplication table using the appropriate signs (\times, \div and $=$) • Begin to recall and use multiplication and division facts for the 2 and 5 multiplication tables using appropriate signs • Begin to solve simple problems involving multiplication and division, using arrays, repeated addition, mental methods and multiplication and division facts • Recognise odd and even numbers to at least 100. Explain how they know a particular number is odd or is even • Make connections between multiplication and division by 2 and doubling and halving and use these to reason about problems and calculations • Show that multiplication of 2 numbers can be done in any order (commutative) • Understand multiplication as repeated addition 	<ul style="list-style-type: none"> • Understand that multiplication is a shorter form of repeated addition and can be represented by an array; e.g. the total in a 5 by 3 array is represented by $5 + 5 + 5$ or 5×3 • Recognise that division can result in remainders and interpret these in the context of the problem; e.g. when sharing 13 biscuits between five children, know that each child has two biscuits and there are three biscuits left in the packet • Understand division as sharing equally, or as forming groups of the same size through repeated subtraction; e.g. interpret $8 \div 2$ as: 'How many objects will each person have if 8 objects are shared equally between 2 people?' and as: 'How many groups of 2 can be made from 8 objects?' • Associate statements such as: 'You have two sweets but I have four times as many' with the appropriate calculation i.e. 2×4 • Recognise that questions such as: 'How many wheels are there altogether on three cars?' involve multiplication • Explain multiplying as putting lots of equal groups together and dividing as undoing this by breaking the product up into equal-sized groups or parts • Use mathematical signs and symbols to record number sentences involving each of the four operations <p>Apply understanding of the four operations and knowledge of facts to identify missing numbers in number sentences such as: $\square - 70 = 30$, $5 \times \square = 20$ and $12 \div 2 = \square$</p>		
<p>Milestone 3</p>	<p>Addition and Subtraction</p> <p>Add & subtract numbers mentally, including:</p> <ul style="list-style-type: none"> • a three-digit number & ones • a three-digit number & tens • a three-digit number & hundreds • Add & subtract numbers with up to three digits, using formal written 	<p>The adult supports the learner to:</p> <p>Addition and subtraction</p> <ul style="list-style-type: none"> • <i>Recognise the fact that addition can be done in any order. Continue to recognise and construct equivalent calculations in order to carry out addition and subtraction calculations mentally</i> • <i>Extend mental calculation skills to add and subtract combinations of 3 digit numbers and ones, 3 digit numbers and 10's and 3 digit numbers and 100s e.g. $147 - 8 = 147 - 30 = 147 - 100 =$</i> 	<p>Use objects to make equal sets e.g. blocks</p> <p>Use bowls or other containers as a vessel for objects</p> <p>Numicon</p> <p>Symbols to show number sentences and more or less</p>	<p>See Appendix</p>

	<p>methods of columnar addition & subtraction</p> <ul style="list-style-type: none"> Solve problems, including missing number problems, using number facts, place value, & more complex addition & subtraction <p>Multiplication and Subtraction</p> <ul style="list-style-type: none"> Recall & use multiplication & division facts for the 3, 4 & 8 multiplication tables Write & calculate mathematical statements for multiplication & division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental & progressing to formal written methods Solve problems, including missing number problems, involving multiplication & division, including positive integer scaling problems & correspondence problems in which n objects are connected to m objects Estimate the answer to a calculation & use inverse operations to check answers 	<ul style="list-style-type: none"> Practice solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100 Use understanding of place value and partitioning, and practice using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent <p>Multiplication and division</p> <ul style="list-style-type: none"> Develop efficient mental methods, e.g., using commutativity and associativity (e.g., $4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240$) and multiplication and division facts (e.g., using $3 \times 2 = 6$, $6 \div 3 = 2$ and $2 = 6 \div 3$) to derive related facts (e.g., $30 \times 2 = 60$, $60 \div 3 = 20$ and $20 = 60 \div 3$) Continue to practice mental recall of multiplication tables when calculating mathematical statements in order to improve fluency. Through doubling, connect the 2, 4 and 8 multiplication tables Use and apply facts from the 3, 4 and 8 times tables Use knowledge of multiplication facts to derive division facts and for calculations that they cannot recall use a practical approach or an informal method such as repeated steps on a number line Develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division. Understand and describe the effect on the digits when multiplying by 10 and 100 and use formal and informal written methods to multiply two digits by one digit numbers Apply number facts knowledge and use place value knowledge to solve problems including missing number problems 	<p>Paper</p> <p>ICT: Busythings, Twinkl, etc.</p> <p>Base 10 for showing how to calculate with addition and subtraction using hundreds, tens and ones.</p> <p>Vocabulary list</p> <p>Use column methods for paper and pencil methods using Hundreds, tens and ones.</p> <p>100 square for timetable patterns</p> <p>Vocabulary sheet</p>	
<p>Milestone 4</p>	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> Add & subtract numbers with up to 4 digits using the formal written methods of columnar addition & subtraction where appropriate Solve addition & subtraction two-step problems in contexts, deciding which operations & methods to use & why <p>Multiplication and Division</p> <ul style="list-style-type: none"> Recall multiplication & division facts for multiplication tables up to 12×12 	<p>The adult supports the learner to:</p> <p>Addition and subtraction</p> <ul style="list-style-type: none"> Recognise the need for conventions & rules when carrying out calculations involving more than one addition or subtraction e.g. recognise that the answer to the calculation $9 - 5 - 3$ is 1 and that the calculation is carried out from left to right – otherwise a different answer is obtained (if $5 - 3$ is carried out first the answer is 7). Recognise that addition can be done in any order and a calculation of the type $A - B + C$ can be rewritten as $A + C - B$, and either $A + C$ or $C - B$ can be done first. Apply the rule to calculations such as $12 - 17 + 19$ that are carried out mentally, rearranging this to $12 + 19 - 17$ to avoid negative numbers Always check first to see if calculations can be done mentally e.g. recognise that $50 + 76$ and $60 - 28$ can be worked out mentally, but that to answer $341 + 176$ or $213 - 76$ a written method may be 	<p>Use objects to make equal sets e.g. blocks Use bowls or other containers as a vessel for objects</p> <p>Numicon</p> <p>Symbols to show number sentences and more or less</p> <p>Paper</p> <p>ICT: Busythings, Twinkl, etc.</p> <p>Base 10 to show how calculations work for thousands, hundreds tens and one</p>	<p>See Appendix</p>

	<ul style="list-style-type: none"> Use place value, known & derived facts to multiply & divide mentally, including: multiplying by 0 & 1; dividing by 1; multiplying together three numbers Recognise & use factor pairs & commutativity in mental calculations Multiply two-digit & three-digit numbers by a one-digit number using formal written layout Estimate & use inverse operations to check answers to a calculation Solve problems involving multiplying & adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects 	<p><i>needed. Begin to understand why some methods are more efficient than others</i></p> <ul style="list-style-type: none"> <i>Add or subtract mentally pairs of two-digit whole numbers, such as 38 + 47 and 83 – 35 with increasing fluency using a range of strategies eg. in the case of addition add separately 30 + 40 and 8 + 7, and then sum 70 and 15 to get 85; or to add 40 to 38 to make 78, then add 7 to get 85. In the case of subtraction count on, adding 5 to 35 and 43 to 40, then adding 5 and 43 to get the difference of 48 or subtract 30 from 83 to get 53, and a further 5 to get 48. Discuss and look for methods that can be done most easily with little or no recording</i> <i>Find the difference between two near numbers such as 7003 and 6988 by bridging across 7000 and adding 3 and 12 to get the answer 15</i> <i>Continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency</i> <p>Multiplication and division</p> <ul style="list-style-type: none"> <i>Recall and use multiplication tables and related division facts to aid fluency</i> <i>Write statements about the equality of expressions (e.g., use the distributive law $39 \times 7 = 30 \times 7 + 9 \times 7$ and associative law $(2 \times 3) \times 4 = 2 \times (3 \times 4)$)</i> <i>Develop fluency in the formal written method of short multiplication and short division with exact answers</i> <i>Combine knowledge of number facts and rules of arithmetic to solve mental and written calculations e.g., $2 \times 6 \times 5 = 10 \times 6 = 60$</i> <i>Extend mental methods to three-digit numbers to derive facts, (e.g. $600 \div 3 = 200$ can be derived from $2 \times 3 = 6$)</i> <i>Use mental methods to find the missing numbers in number sentences such as $\square + 54 = 86$, or $94 - n = 52$.</i> <i>Solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a meal on a menu, or three cakes shared equally between 10 children</i> 	<p>Vocabulary list</p> <p>Use column methods for paper and pencil methods using Thousands, Hundreds, tens and ones.</p> <p>100 square for timetable patterns</p> <p>Vocabulary sheet</p>	
NUMBER – Fractions				
	Curriculum Content What the learner is learning	What the adults working with the learner does	Enabling Environment What is provided ?	Vocabulary

Bridging 1	<ul style="list-style-type: none"> Join in simple practical sharing activities 	<ul style="list-style-type: none"> To demonstrate and model simple sharing activities 'one for me one for you'. 	<p>Use simple objects to demonstrate sharing equally between 2 people</p> <p>Vocabulary sheet</p>	See Appendix
Bridging 2	<ul style="list-style-type: none"> Recognise when quantities are the same 	<ul style="list-style-type: none"> When sharing, ensure that there are equal numbers of quantities at the end. 	<p>Use simple objects to demonstrate sharing equally between 2 people</p> <p>Vocabulary sheet</p>	See Appendix
Bridging 3	<ul style="list-style-type: none"> Understand that a whole object can be split or shared equally 	<ul style="list-style-type: none"> Use practical examples to split whole objects in half or other equal ways. E.g. a pizza, or a bar of chocolate. 	<p>Use easily cuttable objects to show how one object can be divided e.g chocolate, pizza, playdough. Ensure it is cut equally when shared out.</p> <p>Vocabulary sheet</p>	See Appendix
Milestone 1	<ul style="list-style-type: none"> Recognise, find & name a half as one of two equal parts of an object, shape or quantity Recognise, find & name a quarter as one of four equal parts of an object, shape or quantity 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> <i>Solve problems involving finding half and quarter of shapes, objects and quantities</i> <i>Recognise and describe halves and quarters in contexts such as arrangements of beads where half are red and half are blue, or when explaining: 'I gave a quarter of my grapes to my friend.'</i> <i>Recognise and find half a length e.g .recognise that that a 5cm worm is half the length of a 10cm worm</i> <i>Share, say, 12 objects between two or four friends</i> <i>Shade or illustrate with apparatus half / quarter of different shapes</i> <p><i>Begin to relate whole / half to telling the time on an analogue clock</i></p>	<p>Use simple objects to demonstrate sharing equally between 2 or more people equally.</p> <p>Use easily cuttable objects to show how one object can be divided e.g chocolate, pizza, playdough. Ensure it is cut equally when shared out.</p> <p>Sheets and pictures demonstrating half pictures or quarter pictures Clock for demonstrating half past and quarters.</p> <p>ICT Busythings, Espresso, Twinkl Objects to share out</p> <p>Worksheets</p> <p>Pizza Game</p> <p>Game</p>	See Appendix

<p>Milestone 2</p>	<ul style="list-style-type: none"> Recognise, find, name and write fractions of a half of a length, shape, set of objects or quantity Begin to find $1/3$, $1/4$, $2/4$ and $3/4$ of a small set of objects Express simple problems using fraction notation and solve them Recognise the equivalence of $2/4$s and $1/2$ in practical contexts and when counting in fractions objects 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> Read and write $1/2$, $1/4$, $3/4$ and $1/3$ Understand that $1/4$ and $3/4$ are complementary and that $3/4$ is made up of three one-quarter parts Recognise the relationship between $1/2$ and $1/4$; e.g. $1/2$ of £12 is £6 and $1/4$ of £12 is £3, 'half again' Begin to associate problems such as 'I have spent a $1/4$ of 12p' with division calculations e.g. $12 \div 4$ Connect finding $1/3$ with dividing into three equal parts Begin to understand that the size of the parts is proportional to the size of the whole <p>Understand that $2/4$ denotes two of four equal parts and that this is equivalent to $1/2$</p>	<p>Use simple objects to demonstrate sharing equally between 2 or more people equally.</p> <p>Use easily cuttable objects to show how one object can be divided e.g chocolate, pizza, playdough. Ensure it is cut equally when shared out.</p> <p>Sheets and pictures demonstrating half pictures or quarter pictures Clock for demonstrating half past and quarters.</p> <p>ICT Busythings, Espresso, Twinkl</p> <p>Worksheets</p> <p>Money to help divide.</p> <p>Pizza Game</p> <p>Game</p> <p>Vocabulary sheet</p>	<p>See appendix</p>
<p>Milestone 3</p>	<ul style="list-style-type: none"> Count up & down in tenths; recognise that tenths arise from dividing an object into 10 equal parts & in dividing one-digit numbers or quantities by 10 Recognise, find & write fractions of a discrete set of objects: unit fractions & non-unit fractions with small denominators Recognise & use fractions as numbers: unit fractions & non-unit fractions with small denominators Recognise & show, using diagrams, equivalent fractions with small denominators Compare & order unit fractions, & fractions with the same denominators Solve problems that involve all of the above <ul style="list-style-type: none"> Add & subtract fractions with the same denominator within one whole [e.g., $5/7 + 1/7 = 6/7$] 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> <i>Understand that it is possible to count in steps smaller than 1 e.g. halves & tenths, initially up to ten and then beyond</i> <i>Connect tenths to place value, decimal measures and to division by 10</i> <i>Begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence. Go beyond the [0, 1] interval, including relating this to measure</i> <i>Understand the relation between unit fractions as operators (fractions of), and division by integers</i> <i>Continue to recognise fractions in the context of parts of a whole, numbers measurements, a shape, and unit fractions as a division of a quantity</i> <i>Read & write proper fractions. Understand that in the fraction $1/5$ the denominator 5 identifies the number of parts the whole quantity has been divided into. It is also the divisor when finding $1/5$ of, say, 20 kg. Understand that the 3 in the fraction $3/5$ indicates that the fraction represents three of these five parts or three fifths of the whole</i> <i>Estimate & identify fractional parts of shapes</i> 	<p>Use simple objects to demonstrate sharing equally between 2 or more people equally.</p> <p>Use easily cuttable objects to show how one object can be divided e.g chocolate, pizza, playdough. Ensure it is cut equally when shared out.</p> <p>Sheets and pictures demonstrating half pictures or quarter pictures Clock for demonstrating half past and quarters.</p> <p>ICT Busythings, Espresso, Twinkl</p> <p>Worksheets</p> <p>Money to help divide and show decimals</p> <p>Pizza game</p> <p>Games</p>	<p>See appendix</p>

		<ul style="list-style-type: none"> Use diagrams to compare fractions e.g. use a rectangle of 4 rows & 3 columns to show the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ & $\frac{1}{6}$, & identify which fraction is the largest. Use similar grids to begin to identify equivalent fractions such as: $\frac{4}{8}$, $\frac{2}{4}$ & $\frac{1}{2}$; & $\frac{1}{3}$ & $\frac{3}{9}$ Add and subtract fractions with the same denominator through a variety of increasingly complex problems to improve fluency Add and subtract fractions with the same denominator provided the answer is within one whole e.g. $\frac{5}{6} - \frac{2}{6} = \frac{3}{6}$ Solve simple problems in contexts, deciding which of the four operations to use and why including in measuring and scaling contexts, (e.g., four times as high, eight times as long etc.) and correspondence problems in which m objects are connected to n objects (e.g., 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children) 	Vocabulary sheet	
Milestone 4	<ul style="list-style-type: none"> Recognise & show, using diagrams, families of common equivalent fractions Count up & down in hundredths; recognise that hundredths arise when dividing an object by one hundred & dividing tenths by ten Recognise & write decimal equivalents of any number of tenths or hundredths Recognise & write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ Find the effect of dividing a one- or two-digit number by 10 & 100, identifying the value of the digits in the answer as ones, tenths & hundredths Round decimals with one decimal place to the nearest whole number Compare numbers with the same number of decimal places up to two decimal places Add & subtract fractions with the same denominator Solve simple measure & money problems involving fractions & decimals to two decimal places Solve problems involving increasingly harder fractions to calculate quantities, & fractions to 	<ul style="list-style-type: none"> Understand that decimals and fractions are different ways of expressing numbers and proportions Make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities Use a number line to connect fractions, numbers and measures Use practical resources to compare fractions in context e.g. to establish that one fifth of 35 kg is more than one seventh of 35 kg Understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths Use factors and multiples to recognise equivalent fractions and simplify where appropriate (for example, $\frac{6}{9} = \frac{2}{3}$ or $\frac{1}{4} = \frac{2}{8}$) Count forwards & backwards in different fractional steps e.g. one half, one quarter & one third, & position mixed numbers on a number line Connect hundredths to tenths and place value and decimal measure Extend understanding of the number system and decimal place value to tenths then hundredths Understand decimal notation and the language associated with it e.g. the meaning of the decimal point as a separator for whole numbers & parts of a whole, including in the context of measures Relate decimal notation to division of whole number by 10 and later 100 Represent numbers with one or two decimal places in several ways, such as on number lines & partition numbers with up to two decimal places; e.g. partition 4.75 as $4 + 0.7 + 0.05$ & recognise that this is equivalent to $4 + \frac{7}{10} + \frac{5}{100}$. Write the decimal number that is equivalent, say, to four tenths & six hundredths, & position decimals on a number line 	<p>Use simple objects to demonstrate sharing equally between 2 or more people equally.</p> <p>Use easily cuttable objects to show how one object can be divided e.g chocolate, pizza, playdough. Ensure it is cut equally when shared out.</p> <p>Sheets and pictures demonstrating half pictures or quarter pictures Clock for demonstrating half past and quarters.</p> <p>ICT Busythings, Espresso, Twinkl</p> <p>Worksheets</p> <p>Money to help divide and show decimals</p> <p>Paper and paper methods of addition</p> <p>Pizza game</p> <p>Games</p> <p>Vocabulary sheet</p>	See appendix

	divide quantities, including non-unit fractions where the answer is a whole number	<ul style="list-style-type: none"> • <i>Make comparisons and order decimal amounts and quantities that are expressed to the same number of decimal places</i> • <i>Recognise the decimal equivalents of common fractions, including halves, tenths & hundredths</i> 		
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Measurement and Geometry

Measures				
	Curriculum Content What the learner is learning	What the adults working with the learner does	Enabling Environment What is provided ?	Vocabulary
Bridging 1	<p><i>Compare, describe & solve practical problems for:</i></p> <ul style="list-style-type: none"> • Compare objects directly focusing on one dimension where the difference in size is less obvious. • Begin to use comparative language e.g fast/slow, long/short, heavy/ light, full/empty in a range of contexts and practical applications • to make simple estimates and check accuracy using non-standard units 	<p>Compare, describe & solve practical problems for:</p> <ul style="list-style-type: none"> • For students to be asked which is the tallest, widest longest between two objects. Ask them to put them next door to each other to compare the sizes so they can be sure. • Ensure that they are aware of the correct vocabulary for comparison language and to keep it consistent. • To compare simple comparisons with other objects i.e how many blocks high is the table. Or how many blocks fit the length of the book. Try and see if they can guess how many will fit first before proceeding. 	<p>Money</p> <p>Objects to buy</p> <p>ICT: espresso, Twinkl, Busythings</p> <p>Objects to compare sizes.</p> <p>Measure snakes</p> <p>Weights</p> <p>Scales and balances</p>	See appendix

	<p>Money</p> <ul style="list-style-type: none"> In shopping activities use up to ten 1p coins to buy objects up to a value of 10p. Recognise and sort 1p, 2p and 5p coins by the size, shape and colour. <p>Time</p> <ul style="list-style-type: none"> Sequence chronologically three daily events. Understand and use in context some terminology relating to passage of time i.e. before, after, later, next 	<p>Money</p> <ul style="list-style-type: none"> Begin to use shopping activities and use their knowledge of recognising 1 to 10p to count out up to 10 1p coins to help them see that value changes Begin to look at and compare the coins 1p, 2p and 5p by size shape and colour and realise that different coins can be swapped for different items. <p>Time</p> <ul style="list-style-type: none"> Be encourage to sequence three events through the day e.g. first you come into school then you have lunch in school then you go home. Use symbols or pictures to help or even use visual timetables to help sequence. Use the correct terminology related to time and the passing of time. Show consistency by using the same vocabulary at all times. 	<p>Glasses for capacity</p> <p>Clocks Clack stamps</p> <p>Worksheets</p> <p>Vocabulary sheet</p>	
Bridging 2	<p>Compare, describe & solve practical problems for:</p> <ul style="list-style-type: none"> Find the longest or shortest from a group of 3. Find an object i.e. longer/shorter, heavier/lighter than a given object. Order 2 or 3 items, length by length, weight or height. Make reasonable estimates with increasing accuracy. <p>Money</p> <ul style="list-style-type: none"> Recognise and sort 1p, 2p, 5p 10p, 20p, 50p coins by the size, shape and colour. 	<p>Compare, describe & solve practical problems for:</p> <ul style="list-style-type: none"> For students to be encouraged to use comparative techniques to find the longest or shortest object from a group of three. For students to be given the techniques and apparatus to find objects longer/shorter or heavier/lighter than a given object. For students to learn techniques and problem solving skills to order up to 3 object by length, weight or height. Ensure that they are aware of the correct vocabulary for comparison language and to keep it consistent. To compare simple comparisons with other objects in terms of length, height or weight i.e how many blocks high is the table. Or how many 	<p>Money</p> <p>Objects to buy</p> <p>ICT: espresso, Twinkl, Busythings</p> <p>Objects to compare sizes.</p> <p>Measure snakes</p> <p>Weights</p> <p>Scales and balances</p> <p>Glasses for capacity</p> <p>Clocks Clack stamps</p>	See appendix

	<ul style="list-style-type: none"> • Find equivalent amounts of 1ps to equal 1p, 2p or 5p and 10p coin. <p>Time</p> <ul style="list-style-type: none"> • Show familiarity with names of days of the week. • Know there are 7 days in a week. • Know the months of significant events; e.g. Birthday • Know that different events/ activities can occur on different days. • Be aware of the continuous sequence of day and night and relate to the passing of days of the week. • Shows familiarity with range of devices which are linked to time e.g. calendars, sand timers, clocks, digital and analogue • 	<p>blocks fit the length of the book. Try and see if they can guess how many will fit first before proceeding.</p> <p>Money</p> <ul style="list-style-type: none"> • Begin to use shopping activities and use their knowledge of recognising 1 to 50p take particular notice of the colour size and shape. • Find the number of 1ps that are equivalent to the coins from 1p to 10p ensure that they know that each coin does have a different value. <p>Time</p> <ul style="list-style-type: none"> • Encourage the students to know the days of the week. This could be through rote, songs and show that different things happen on different days. E.g. Swimming is on Wednesdays. • Learn that there are 7 days in a week, by counting when saying them by rote. • Teach important months of the year including Birthdays, Christmas, Summer holidays etc. • Show that the sequence of day and night is continuous and relates to the changing of the days. • Show and let the students play with devices linked to time including calendars, sand timers clocks etc. 	<p>Worksheets</p> <p>Vocabulary sheet</p>	
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<p>Bridging 3</p>	<p><i>Compare, describe & solve practical problems for:</i></p> <ul style="list-style-type: none"> • Measure length/capacity and order more than 2 measurements using direct comparisons e.g. compare lengths directly and put them in order. • Measure the weight of two objects by handling or using a balance. • Understand the comparative terms when comparing two objects e.g. heavier/lighter, shorter and longer. • Be able to recognise objects that have the same length, mass and capacity. E.g. find something with the same length as a ruler; the same mass as a block; the same capacity as a bottle. • Begin to understand the importance of starting at the same point when measuring lengths. <p><i>Money</i></p> <ul style="list-style-type: none"> • Recognise all coins up to £2. • Find different combinations of coins to a value of 10p. • In shopping activities, understand that sometimes change can be given when shopping. • Have an awareness, that beyond a £2 coin there are 	<p><i>Compare, describe & solve practical problems for:</i></p> <ul style="list-style-type: none"> • Encourage the comparison of lengths and capacity and place the objects in order of size both small to large and large to small. • Encourage and make sure the students are able to use a balance or be able to compare weights by handling them. This technique includes knowing the balance goes down for the heaviest and stays up for the lightest. • Understand the language that is used at this level when comparing two objects and use them to show their understanding. • Encourage the students to find objects that have the same length, mass or capacity as another. • Show and model that it is always important to start at the same point when measuring lengths <p>Money:</p> <ul style="list-style-type: none"> • Make sure that the students recognises all the coins from 1p to £2 by practicing through role play and games. • Show that you can use different combination of coins to make 10p, e.g. 5p, 2p,2p,1p. • Show that change can be given when exchanging a coin for an item as an amount smaller in value to the one you paid for. • Show that beyond £2 there are larger denominations of notes that is worth higher in value. <p>Time:</p> <ul style="list-style-type: none"> • Make sure that the student knows the days of the week in order. • Understand the difference between weekends and weekdays with important aspects of their life. E.g. Weekends is when we do not come into school. 	<p>Money</p> <p>Objects to buy</p> <p>ICT: espresso, Twinkl, Busythings</p> <p>Objects to compare sizes.</p> <p>Measure snakes</p> <p>Weights</p> <p>Scales and balances</p> <p>Glasses for capacity</p> <p>Clocks</p> <p>Clack stamps</p> <p>Worksheets</p> <p>Vocabulary sheet</p>	<p>See appendix</p>
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	<p>larger denominations of money represented by notes.</p> <p>Time</p> <ul style="list-style-type: none"> Recall the days of the week in order. Know the weekdays and weekend days Begin to use appropriate language to talk about time sequences e.g. today/yesterday/tomorrow. Begin to know the months of the year. Be familiar with a clock face and the hands on an analogue clock Be familiar with the terminology seconds, minutes and hours 	<ul style="list-style-type: none"> Use the language of time to talk about sequencing e.g. tomorrow we will be going swimming. Begin to understand the months of the year by rote or song. Understand that the clock face as important aspect of telling the time and that the hands of the clock go round at different speeds. Understand the terminology of seconds, minutes and hours through time and practical activities as well as simple comparison. 		
Milestone 1	<p>Compare, describe & solve practical problems for:</p> <ul style="list-style-type: none"> lengths & heights [e.g. long/short, longer/shorter, tall/short, double/half] mass/weight [e.g. heavy/light, heavier than, lighter than] capacity & volume [e.g. full/empty, more than, less than, half, half full, quarter] time [e.g. quicker, slower, earlier, later] <p>Measure & begin to record the following:</p> <ul style="list-style-type: none"> lengths & heights mass/weight capacity & volume time (hours, minutes, seconds) <p>Money</p>	<p>The adult supports the learner to:</p> <p>Metric Measures</p> <ul style="list-style-type: none"> Record measures using pictures, symbols and numbers Use standard units to measure and compare objects e.g. place metre sticks end-to-end to find out how much wider the hall is than the classroom or use a litre jug to measure how much more the washing-up bowl holds than the cola bottle <p>Money</p> <ul style="list-style-type: none"> Distinguish coins by sorting them and start to understand their value. Begin to recognise that some coins have a greater value than others, and will buy more: Play money games and collect 1p or 2p coins to the value of 10p and begin to count up 'how much this is altogether' Shop, paying for items that cost 1p, 3p, 5p, 7p or 9p using only 2p coins, and receiving the appropriate 	<p>Money</p> <p>Objects to buy</p> <p>ICT: espresso, Twinkl, Busythings</p> <p>Objects to compare sizes.</p> <p>Measure snakes</p> <p>Weights</p> <p>Scales and balances</p> <p>Glasses for capacity</p> <p>Clocks</p> <p>I-pads for measuring time</p>	See appendix

	<ul style="list-style-type: none"> Recognise & know the value of different denominations of coins & notes <p>Time</p> <ul style="list-style-type: none"> Sequence events in chronological order using language [e.g. before & after, next, first, today, yesterday, tomorrow, morning, afternoon & evening] Recognise & use language relating to dates, including days of the week, weeks, months & years Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times 	<p><i>amount of change in 1p coins. Use coins to respond to questions such as:</i> <i>Michael had £5. He spent £3. How much did he have left?</i></p> <p>Time</p> <ul style="list-style-type: none"> Use terms such as morning, afternoon and evening, yesterday and tomorrow Order the days of the week and learn that weekend days are Saturday and Sunday Order the months of the year and talk about significant dates e.g. dates of their birthdays Read time to the hour and half hour on a clock with hands <p><i>Recognise half past the hour in day-to-day routines</i></p>	<p>Clack stamps</p> <p>Worksheets</p> <p>Vocabulary sheet</p>	
Milestone 2	<p>Metric Measures</p> <ul style="list-style-type: none"> Compare and order lengths, mass, volume or capacity and record the results using greater than (>), less than (<) and equals (=) Reason about simple multiplicative relationships such as twice as long, 10 times as high Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest labelled unit using rulers, scales, thermometers and measuring vessels Solve problems involving measures <p>Money</p>	<p>The adult supports the learner to:</p> <p>Metric Measures</p> <ul style="list-style-type: none"> Read the numbered divisions on a scale and interpret unnumbered divisions between them, e.g. on a set of scales with 100 g marks numbered, but 10 g intervals unnumbered Use standard units to measure accurately to the nearest division e.g. with rulers and tape measures, measure to the nearest centimetre to compare the strides of children in the class against strides made by different animals Use standard units of measurement with increasing accuracy, using their knowledge of the number system. Use the appropriate language and record using standard abbreviations Compare measures includes simple multiples such as 'half as high'; 'twice as wide' Solve problems involving mass or capacity e.g. find the weight of one marble in grams and then scale up by multiplying to work out the weight of boxes 	<p>Money</p> <p>Objects to buy</p> <p>ICT: espresso, Twinkl, Busythings</p> <p>Objects to compare sizes.</p> <p>Measure snakes</p> <p>Weights</p> <p>Scales and balances</p> <p>Glasses for capacity</p> <p>Clocks</p> <p>I-pads for measuring time</p>	See appendix

	<ul style="list-style-type: none"> • Recognise and use the 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 problems involving money of the same unit, including giving change <p>Time</p> <ul style="list-style-type: none"> • Compare and order intervals of time • Recognise, tell and write the time to 5 minutes: o'clock, half past and quarter past and begin to recognise quarter to the hour • Draw hands on a clock to show the time to 5 minutes including; the hour and at half past • Solve problems involving time • Know the number of minutes in an hour and the number of hours in a day 	<p><i>of two, five or ten marbles then check answers by weighing the boxes</i></p> <p>Money</p> <ul style="list-style-type: none"> • <i>Become fluent in counting and recognising coins</i> • <i>Read and say amounts of money confidently and use the symbols £ and p accurately, recording pounds and pence separately</i> <p>Time</p> <p><i>Become fluent in telling the time on analogue clocks and recording it</i></p>	<p>Clack stamps</p> <p>Worksheets</p> <p>Vocabulary sheet</p>	
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<p>Milestone 3</p>	<p>Metric Measures</p> <ul style="list-style-type: none"> • Measure, compare, add & subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • Measure the perimeter of simple 2-D shapes <p>Money</p> <ul style="list-style-type: none"> • Add & subtract amounts of money to give change, using both £ & p in practical contexts <p>Time</p> <ul style="list-style-type: none"> • Tell & write the time from an analogue clock, including using Roman numerals from I to XII, & 12-hour & 24-hour clocks • Estimate & read time with increasing accuracy to the nearest minute; record & compare time in terms of seconds, minutes & hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon & midnight • Know the number of seconds in a minute & the number of days in each month, year & leap year <p>Compare durations of events [e.g. to calculate the time taken by particular events or tasks]</p>	<p>The adult supports the learner to:</p> <p>Metric Measures</p> <ul style="list-style-type: none"> • <i>Continue to measure using the appropriate tools and units Know the relationship between units such as 1kg being equivalent to 1000g and 5m = 500cm etc</i> • <i>Understand what perimeter is and find the perimeter of simple 2D shapes such as squares and rectangles. Use understanding of geometry to find missing measurements</i> • <i>Understand the comparison of measures includes simple scaling by integers (e.g., a given quantity or measure is twice as long or five times as high) and how this connects to multiplication</i> • <i>Use both analogue and digital 12-hour clocks and record their times</i> <p>Money</p> <ul style="list-style-type: none"> • <i>Continue to develop fluency in recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. Record £ and p separately</i> <p>Time</p> <ul style="list-style-type: none"> • <i>Tell the time to the nearest minute</i> • <i>Develop fluency in the use both analogue and digital 12-hour clocks and record their times, in preparation for using digital 24-hour clocks in year 4</i> • <i>Choose the unit of time (including seconds) to estimate or measure time intervals, such as the time taken to walk across a room or the time to travel by plane to another country</i> <p><i>Use time vocabulary and calculate time intervals in practical contexts e.g. It takes me 26 minutes to walk to school from home or I can hold my breath for 28 seconds</i></p>	<p>Money</p> <p>Objects to buy</p> <p>ICT: espresso, Twinkl, Busythings</p> <p>Objects to compare sizes.</p> <p>Measure snakes</p> <p>Weights</p> <p>Scales and balances</p> <p>Glasses for capacity</p> <p>Clocks</p> <p>I-pads for measuring time</p> <p>Clack stamps</p> <p>Worksheets</p> <p>Vocabulary sheet</p>	<p>See appendix</p>
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<p>Milestone 4</p>	<p>Metric Measures</p> <ul style="list-style-type: none"> Convert between different units of measure [e.g. kilometre to metre; hour to minute] Measure & calculate the perimeter of a rectilinear figure (including squares) in centimetres & metres Find the area of rectilinear shapes by counting squares <p>Money</p> <ul style="list-style-type: none"> Estimate, compare & calculate different measures, including money in pounds & pence <p>Time</p> <ul style="list-style-type: none"> Read, write & convert time between analogue & digital 12- & 24-hour clocks <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</p>	<p>The adult supports the learner to:</p> <p>Metric Measures</p> <ul style="list-style-type: none"> <i>Build on understanding of place value and decimal notation to record metric measures, including money</i> <i>Convert from larger to smaller units such as km to metres using understanding of place value and multiplication and division</i> <i>Record estimated and measured lengths, weights and capacities using decimal notation where appropriate, e.g. 1.35 metres</i> <i>Understand and use the prefixes kilo, centi and milli to write, say, 4125 grams as 4 kilograms and 125 grams</i> <i>Relate standard measures to real life contexts, as in: 'This room is about x m wide.'</i> <i>Interpret partly numbered scales working out the value of each division and counting between the numbered divisions to confirm their interpretation</i> <i>Understand and find the perimeter and area of a rectangle or rectilinear shape. When finding the area relate to arrays and multiplication.</i> <i>Give the answer in square units e.g. using a centimetre grid, draw different shapes with the same perimeter and look for the shape with the biggest area. Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit</i> <i>Record readings using whole numbers or decimals, e.g. as 5.6 grams or 1.45 litres.</i> <p>Money</p> <ul style="list-style-type: none"> <i>Build on understanding of place value and decimal notation to record money</i> <p>Time</p>	<p>Money</p> <p>Objects to buy</p> <p>ICT: espresso, Twinkl, Busythings</p> <p>Objects to compare sizes.</p> <p>Measure snakes</p> <p>Weights</p> <p>Scales and balances</p> <p>Glasses for capacity</p> <p>Clocks</p> <p>I-pads for measuring time</p> <p>Clack stamps</p> <p>Worksheets</p> <p>Vocabulary sheet</p>	<p>See appendix</p>
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		<ul style="list-style-type: none"> Use 12hour then 24-hour clock notation and am and pm e.g. recognizing that 2:45 pm is the same as a quarter to three in the afternoon Choose the unit of time to estimate or measure time intervals, such as the time taken to walk across a room or the time to travel by plane to another country. <p>Interpret timetables and use them to calculate, say, how long a journey should take, using a time line as support</p>		
Properties of shape				
	Curriculum Content What the learner is learning	What the adults working with the learner does	Enabling Environment What is provided ?	
Bridging 1	<p>Recognise and name common 2-D & 3-D shapes, including:</p> <ul style="list-style-type: none"> Begin to use familiar mathematical and everyday language relating to shape e.g a round ball, my shape has straight sides To be able to match shapes e.g. can you give/ show me another shape like this one Sort shapes according to given criteria 	<p>Recognise and name common 2-D & 3-D shapes, including:</p> <ul style="list-style-type: none"> Use consistent vocabulary when relating it to shape which is set at that level. Be aware that when matching shapes that the colour varies as well so that they do not get confused that colour is a criteria of the shape. Make sure that the students remember to count each of the corners and not count a corner or side more than once. You can use markers or stickers to ensure that they have been counted. Make sure they can differentiate between a side and a corner. 	<p>Vocabulary sheet</p> <p>2 d shapes - and other shapes that can look like the geometric shape</p> <p>3d Shapes – and other shapes that can look like the geometric shape</p> <p>ICT: espresso, Twinkl, Busythings, espresso</p> <p>Venn diagram rings</p>	See appendix
Bridging 2	<p>Recognise and name common 2-D & 3-D shapes, including:</p> <ul style="list-style-type: none"> Begin to identify own criteria for sorting and matching 2D and 3D shapes using familiar every day and mathematical language Begin to use the language of straight and curved 	<p>Recognise and name common 2-D & 3-D shapes, including:</p> <ul style="list-style-type: none"> Although pupil speak is important make sure that you encourage the student to use and learn the mathematical vocabulary associated with that level when describing the criterion of the shape. Ensure that the vocabulary associated with 2D and 3D shape is consistent to that type of 	<p>Vocabulary sheet</p> <p>2 d shapes - and other shapes that can look like the geometric shape</p> <p>3d Shapes – and other shapes that can look like the geometric shape</p>	See appendix

		shape. e.g. Sides on 2d shapes edges on 3D shapes.	ICT: espresso, Twinkl, Busythings, espresso Venn diagram rings	
Bridging 3	<p>Recognise and name common 2-D & 3-D shapes, including:</p> <ul style="list-style-type: none"> • Be able to name common 2D shapes such as triangle, circle and square • Begin to identify commonalities between 2D and 3D shapes e.g. a cube has square faces • Identify some differences between 2D and 3D shapes using language such as flat and solid • Sort familiar shapes accurately according to their properties • Be able to match simple 3-D shapes by their names e.g. cone, cube pyramid. 	<p>Recognise and name common 2-D & 3-D shapes, including:</p> <ul style="list-style-type: none"> • Ensure the students can name the triangle, circle and square properly. Make them aware that a rectangle is not a square. • Show pictures of 2D shapes as a way of describing or naming the shape. As it can get confusing when you pick up a 2d shape it is instantly a solid. • When looking at 3D shapes encourage the students to look for faces on the shape and see the shape of the faces e.g. on a cone there is a circular face at the bottom. There are square faces on a cube. • Try and sort out shapes according to their properties. This can be an introduction to Venn diagrams. Use curved faces, flat faces on 3d shapes. Number of corners or no corners on 2d shapes. • Make sure that the students know the names of some basic 3D shapes by visually recognising it. Let them understand the properties of each one. 	<p>Vocabulary sheet</p> <p>2 d shapes - and other shapes that can look like the geometric shape</p> <p>3d Shapes – and other shapes that can look like the geometric shape</p> <p>ICT: espresso, Twinkl, Busythings, espresso</p> <p>Venn diagram rings</p>	See appendix
Milestone 1	<p>Recognise and name common 2-D & 3-D shapes, including:</p> <ul style="list-style-type: none"> • 2-D shapes [e.g. rectangles (including squares), circles & triangles] <p>3-D shapes [e.g. cuboids (including cubes), pyramids & spheres]</p>	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • <i>Sort shapes according to their properties e.g. shapes that have four sides, shapes that have rectangle faces</i> • <i>Match 2-D and 3-D shapes to name labels</i> • <i>Recognise odd one out from set of shapes and give reasons</i> 	<p>Vocabulary sheet</p> <p>2 d shapes - and other shapes that can look like the geometric shape</p> <p>3d Shapes – and other shapes that can look like the geometric shape</p>	See appendix

		<ul style="list-style-type: none"> • <i>Recognise common 2-D and 3-D shapes in different positions, sizes or orientations</i> • <i>Connect shapes of real-life objects with common solid 3-D shapes</i> • <i>Use 2-D and 3-D shapes to copy and create pictures, patterns and models and describe using shape names</i> 	<p>ICT: espresso, Twinkl, Busythings, espresso</p> <p>Venn diagram rings</p>	
Milestone 2	<ul style="list-style-type: none"> • Compare and sort common 2-D and 3-D shapes and everyday objects, on the basis of their geometric properties including vertices, sides, edges, faces • Identify lines of symmetry in a vertical line of 2-D shapes • Identify 2-D shapes on the surface of 3-D shapes • Solve problems involving shapes and reason about their properties 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • <i>Handle and name a wide variety of common 2-D and 3-D shapes including: quadrilaterals and polygons, and cuboids, prisms and cones, and identify the properties of each shape (e.g. number of sides, number of faces). Identify, compare and sort shapes on the basis of their properties and use vocabulary precisely, such as sides, edges, vertices and faces</i> • <i>Read and write names for shapes that are appropriate for their word reading and spelling</i> • <i>Draw lines and shapes using a straight edge</i> • <i>Describe patterns and relationships involving shapes</i> 	<p>Vocabulary sheet</p> <p>2 d shapes - and other shapes that can look like the geometric shape</p> <p>3d Shapes – and other shapes that can look like the geometric shape</p> <p>ICT: espresso, Twinkl, Busythings, espresso</p> <p>Venn diagram rings</p> <p>stickers</p>	See appendix
Milestone 3	<ul style="list-style-type: none"> • Draw 2-D shapes & make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations & describe them • Recognise angles as a property of shape or a description of a turn • Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn & four a complete turn; identify whether angles are greater than or less than a right angle 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • <i>Draw, classify and make 2-D shapes and 3-D solids</i> • <i>Use mathematical language to name shapes and describe their properties, including symmetrical and non-symmetrical polygons and polyhedra</i> • <i>Extend description of the properties of 2-D and 3-D shapes by using accurate language, including lengths of lines and acute and obtuse for angles greater or lesser than a right angle</i> • <i>Recognise right angles in shapes and compare other angles with right angles. Understand that two right angles represent half a turn and when put together form a straight line</i> • <i>Draw an angle with two intersecting lines and estimate its size in relation to a right angle, e.g. 'This</i> 	<p>Vocabulary sheet</p> <p>2 d shapes - and other shapes that can look like the geometric shape</p> <p>3d Shapes – and other shapes that can look like the geometric shape</p> <p>ICT: espresso, Twinkl, Busythings, espresso</p> <p>Venn diagram rings</p> <p>Stickers</p> <p>Rulers</p>	See appendix

		<i>angle is about 1/3 of a right angle'. Test it by comparing it to a right angle</i>	Worksheets	
Milestone 4	<ul style="list-style-type: none"> Compare & classify geometric shapes, including quadrilaterals & triangles, based on their properties & sizes Identify acute & obtuse angles & compare & order angles up to two right angles by size Identify lines of symmetry in 2-D shapes presented in different orientations <p>Complete a simple symmetric figure with respect to a specific line of symmetry</p>	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> <i>Continue to classify shapes using geometrical properties, extending to classifying different triangles (e.g., isosceles, equilateral, scalene) and quadrilaterals (e.g., parallelogram, rhombus, trapezium)</i> <i>Compare and order angles in preparation for using a protractor and compare lengths and angles to decide if a polygon is regular or irregular</i> <i>Draw symmetric patterns using a variety of media to become familiar with different orientations of lines of symmetry; and recognise line symmetry in a variety of diagrams, including where the line of symmetry does not dissect the original shape</i> 	<p>Vocabulary sheet</p> <p>2 d shapes - and other shapes that can look like the geometric shape</p> <p>3d Shapes – and other shapes that can look like the geometric shape</p> <p>Different quadrilaterals</p> <p>ICT: espresso, Twinkl, Busythings, espresso</p> <p>Venn diagram rings</p> <p>Stickers</p> <p>Rulers</p> <p>Worksheets</p> <p>protractors</p>	See appendix
Position and direction				
	Curriculum Content What the learner is learning	What the adults working with the learner does	Enabling Environment What is provided ?	Vocabulary

Bridging 1	<p>Position and direction:</p> <ul style="list-style-type: none"> Show some understanding of words, signs and symbols that describe positions (e.g. responding to a request to put an object in, on, under, or inside another object). 	<p>Position and direction:</p> <ul style="list-style-type: none"> Understand the correct vocabulary to help describe position in accordance with the level. Make sure practical activities are used to help see if they understand the positional vocabulary. E.g. dolls house, set up a situation and they have to describe the position of objects. 	<p>Vocabulary sheet</p> <p>Objects for showing position e.g. dolls house, a shelf, a table to place things on and under.</p>	See appendix
Bridging 2	<p>Position and direction:</p> <ul style="list-style-type: none"> Respond to instructional language relating to turning in a range of contexts, PE dance and playing games Recognise right and left in context 	<p>Position and direction:</p> <ul style="list-style-type: none"> Understand the correct vocabulary to help describe position in accordance with the level. Use and instruct using the positional vocabulary in a range of other subjects. Look at ways of helping understand left and right, on splints, using signs or symbols. 	<p>Vocabulary sheet</p> <p>Objects for showing position e.g. dolls house, a shelf, a table to place things on and under.</p> <p>Bee bots</p> <p>Time to have positional and directions outside</p>	
Bridging 3	<p>Position and direction:</p> <ul style="list-style-type: none"> Begin to use instructional language relating to turning in a range of contexts, PE dance and playing games e.g. Left, Right; Backwards and forwards; up, down. Turn around. Understand one whole turn i.e. returning to the starting position. 	<p>Position and direction:</p> <ul style="list-style-type: none"> Use and instruct using the positional vocabulary in a range of other subjects including in movement and when playing games. Move forward 5 places. Demonstrate that when you spin around and finish on the same position that is one full turn. Be careful not to fall over. 	<p>Vocabulary sheet</p> <p>Objects for showing position e.g. dolls house, a shelf, a table to place things on and under.</p> <p>Bee bots</p> <p>Time to have positional and directions outside</p>	
Milestone 1	Describe position, direction & movement, including whole, half, quarter & three-quarter turns	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> <i>Identify and make half, quarter and three-quarter turns in relation to their own bodies</i> <i>Give and follow instructions for moving around a room or for moving a game piece around a board using language such as: up, down, outside, top, middle, bottom, backwards, forwards, clockwise,</i> 	<p>Vocabulary sheet</p> <p>Objects for showing position e.g. dolls house, a shelf, a table to place things on and under.</p> <p>Bee bots</p>	

		<p><i>anti-clockwise, left, right, half, quarter, three-quarter turns</i></p> <ul style="list-style-type: none"> • <i>Understand that a full turn is the same as two half turns or four quarter turns</i> • <i>Begin to relate half and whole turns to telling the time on an analogue clock face</i> • <i>Connect turning clockwise with movement on a clock face</i> 	<p>Time to have positional and directions outside</p> <p>ICT Twinkl, busythings espresso</p>	
Milestone 2	<ul style="list-style-type: none"> • Order and arrange combinations of mathematical objects in patterns and sequences • Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line; distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) 	<ul style="list-style-type: none"> • <i>Solve practical problems involving position and direction including the use of programmable devices and in real life situations</i> 	<p>Vocabulary sheet</p> <p>Objects for showing position e.g. dolls house, a shelf, a table to place things on and under.</p> <p>Bee bots</p> <p>Time to have positional and directions outside</p> <p>ICT Twinkl, busythings espresso</p>	
Milestone 3	<p>Identify horizontal & vertical lines & pairs of perpendicular & parallel lines</p>	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • <i>Understand vocabulary such as horizontal, vertical, perpendicular, parallel and recognise these in the context of shapes</i> • <i>Connect decimals and rounding to drawing and measuring straight lines in centimetres, in a variety of contexts</i> 	<p>Vocabulary sheet</p> <p>Objects for showing position e.g. dolls house, a shelf, a table to place things on and under.</p> <p>Bee bots</p> <p>Time to have positional and directions outside</p> <p>ICT Twinkl, busythings espresso</p> <p>White board for showing the lines and their names</p>	

Milestone 4	<ul style="list-style-type: none"> Describe positions on a 2-D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left/right & up/down Plot specified points & draw sides to complete a given polygon 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> <i>Draw a pair of axes in one quadrant, with equal scales and integer labels.</i> <i>Read, write and use pairs of coordinates, for example (2, 5), including using coordinate-plotting ICT tools</i> 	<p>Vocabulary sheet</p> <p>Objects for showing position e.g. dolls house, a shelf, a table to place things on and under.</p> <p>Bee bots</p> <p>Time to have positional and directions outside</p> <p>ICT Twinkl, busythings espresso</p> <p>Grid paper</p> <p>Worksheets</p>	
Statistics				
Milestone 2	<ul style="list-style-type: none"> 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 simple questions that require sorting the categories by quantity, totaling and comparing simple categorical data 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> <i>Collect information to answer a question linked to other areas of the curriculum</i> <i>Use lists or tables to organise results e.g. use a science topic such as 'Ourselves' to decide if older children are always taller</i> <i>Present findings and answers to questions using block graphs and pictograms to show, e.g. children's eye colour</i> <i>Use pictures to represent the numbers of cubes that can be placed on discs of different papers before each disc sinks</i> <i>Decide how to collect data related to the question to compare, say, how many copies of the sentence children can write or type in two minutes</i> 	<p>ICT: busythings, twinkl, espresso</p> <p>Wordprocessing</p> <p>People</p> <p>Worksheets</p> <p>Objects</p> <p>Grided paper</p>	

		<ul style="list-style-type: none"> • Organise and present results as block graphs or pictograms, using ICT where appropriate • Interpret and communicate their findings and decide on an answer such as: 'It is quicker to write than to type' • Recognise how to record and present data in other subjects e.g. use data from geography about buildings in a street and use pictograms to represent the types of buildings or their purposes and block graphs to show the ages of the buildings or the numbers of floors or rooms each building has 		
Milestone 3	<ul style="list-style-type: none"> • Interpret & present data using bar charts, pictograms & tables • Solve one-step & two-step questions [e.g. 'How many more?' & 'How many fewer?'] using information presented in scaled bar charts & pictograms & tables 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • Collect, organise and interpret data to find answers to questions such as: 'How far will a paper plane fly'. Interpret prepared and own data to answer questions such as 'How many more?' State what the data shows and devise town questions • Understand and use simple scales (e.g., 2, 5, 10 units per cm) in pictograms and bar charts with increasing accuracy • Continue to interpret data presented in many contexts 	<p>ICT: busythings, twinkl, espresso</p> <p>Wordprocessing</p> <p>People</p> <p>Worksheets</p> <p>Objects</p> <p>Grided paper</p>	
Milestone 4	<ul style="list-style-type: none"> • Interpret & present discrete & continuous data using appropriate graphical methods, including bar charts & time graphs. • Solve comparison, sum & difference problems using information presented in bar charts, pictograms, tables & other graphs 	<p>The adult supports the learner to:</p> <ul style="list-style-type: none"> • Organise data into an appropriate form such as temperature data presented in a line graph • Use a range of graphs and diagrams (including the use of ICT) to look for patterns, trends or unusual outcomes • Understand and use a greater range of scales • Begin to relate the graphical representation of data to recording change over time 	<p>ICT: busythings, twinkl, espresso</p> <p>Wordprocessing</p> <p>People</p> <p>Worksheets</p> <p>Objects</p> <p>Graph paper</p> <p>Grided paper</p>	

Impact – Assessment - what difference is our formal mathematics curriculum making?

Progress in mathematics is assessed using Milestones.

Individual outcomes for learners in this curriculum area are set for each key stage through the learner's Education, Health and Care Plan under Cognition and Learning. Annual targets are set and broken into smaller steps on Timelines. Progress is recorded regularly using the Timelines. These are discussed and moderated on a termly basis at Progress meetings and reported on annually through the EHCP Annual Review.