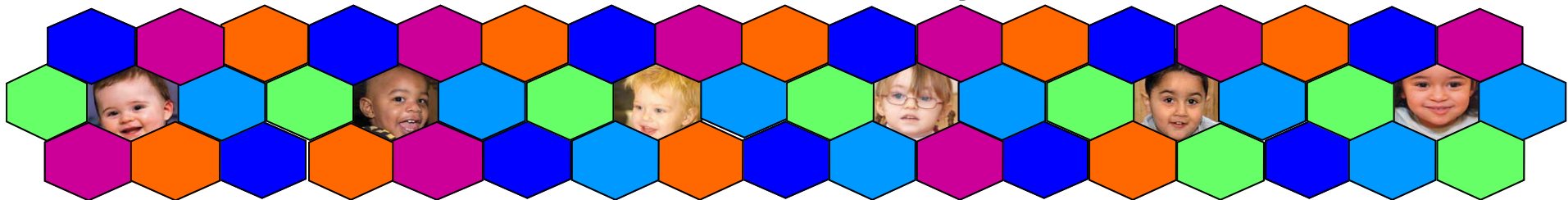


# Overviews of Learning

From the Renewed Framework

## Problem Solving, Reasoning and Numeracy



## Overviews of Learning

## Problem Solving Reasoning and Numeracy



In order to make sure planning is effective and works for the benefit of children practitioners must ensure that plans are flexible and are adapted in response to children's actions and events as they arise. None of the six areas of learning can be delivered in isolation from the others. They are equally important and depend on each other. These overviews of learning from the renewed primary strategy framework provide additional guidance to support planning for Communication Language and Literacy, and in Problem solving Reasoning and Numeracy. All six areas must be delivered through planned, purposeful play, with a balance of adult-led and child-initiated activities.

Overview	Development Matters- PSRN Objectives	Foundation Stage Aspect	Renewed Framework Strand
<b>1</b>	<p><b>Say and use the number names in order in familiar contexts.</b></p> <p>Use ordinal numbers in different contexts.</p> <p>Match sets of objects to numerals that represent the number of objects.</p>	<p>Numbers as labels for counting</p> <p>Shape, Space and Measures</p>	<p>Counting and understanding number</p> <p>Counting and understanding number</p> <p>Using and applying mathematics</p>
<b>2</b>	<p><b>Use language such as 'more' or 'less' to compare two numbers</b></p> <p><b>Find one more or one less than a number from 1 to 10</b></p> <p>Sort objects, making choices and justifying decisions</p>	<p>Calculating</p> <p><i>Shape, Space and Measures</i></p>	<p>Counting and understanding number</p> <p>Knowing and using number facts</p> <p>Using and applying mathematics</p>
<b>3</b>	<p>Estimate how many objects they can see and check by counting</p> <p><b>Count reliably up to 10 everyday objects</b></p> <p><b>Use developing mathematical ideas and methods to solve practical problems</b></p>	<p>Numbers as labels for counting</p>	<p>Counting and understanding number</p> <p>Counting and understanding number</p> <p>Using and applying mathematics</p>
<b>4</b>	<p>Know that numbers identify how many objects are in a set</p> <p>Match sets of objects to numerals that represent the number of objects</p>	<p>Numbers as labels for counting</p> <p><i>Shape, Space and Measures</i></p>	<p>Counting and understanding number</p> <p>Using and applying mathematics</p>
<b>5</b>	<p>Count aloud in ones, twos, fives or tens</p> <p>Count repeated groups of the same size</p>	<p>Numbers as labels for counting</p> <p>Calculating</p>	<p>Counting and understanding number</p> <p>Calculating</p>

	Observe number relationships and patterns in the environment and use these to derive facts  Describe solutions to practical problems, drawing on experience, talking about own ideas, methods and choices	Shape, Space and Measures	Knowing and using number facts  Using and applying mathematics
<b>6</b>	Sort familiar objects to identify their similarities and differences  Count how many objects share a particular property, presenting results using pictures, drawings or numerals  Sort objects, making choices and justifying decisions	Shape, Space and Measures	Handling data  Handling data  Using and applying
<b>7</b>	<b>Recognise numerals 1 to 9</b>  Match sets of objects to numerals that represent the number of objects	Numbers as labels for counting  Shape, Space and Measures	Counting and understanding number  Using and applying mathematics
<b>8</b>	Select two groups of objects to make a given total of objects  <b>Use developing mathematical ideas and methods to solve practical problems</b>	Calculating  Numbers as labels and for Counting / Shape, Space and Measures	Knowing and using number facts  Using and applying mathematics
<b>9</b>	<b>Begin to relate addition to combining two groups of objects and subtraction to 'taking away'</b>  <b>In practical activities and discussion begin to use the vocabulary involved in adding and subtracting</b>  Describe solutions to practical problems, drawing on experience, talking about their own ideas, methods and choices	Calculating    Shape, Space and Measures	Calculating  Calculating  Using and applying mathematics
<b>10</b>	Share objects into equal groups and count how many in each group  Describe solutions to practical problems, drawing on experience, talking about their own ideas, methods and choices	Calculating  Shape, Space and Measures	Calculating  Using and applying mathematics
<b>11</b>	Use familiar objects and common shapes to create and recreate patterns and build models.  <b>Use language such as 'circle' or 'bigger' to describe the shape and size of solids and flat shapes.</b>  <b>Talk about, recognise and recreate simple patterns.</b>	Shape, space and measures	Understanding shape  Understanding shape  Using and applying mathematics

<p><b>12</b></p>	<p><b>Use everyday words to describe position</b></p> <p><b>Use developing mathematical ideas and methods to solve practical problems</b></p>	<p>Shape, space and measures</p>	<p>Understanding shape</p> <p>Using and applying mathematics</p>
<p><b>13</b></p>	<p><b>Use language such as 'greater', 'smaller', 'heavier' or 'lighter' to compare quantities</b></p> <p>Sort objects, making choices and justifying decisions</p>	<p>Shape, space and measures</p>	<p>Measuring</p> <p>Using and applying mathematics</p>
<p><b>14</b></p>	<p>Use everyday language related to time; order and sequence familiar events and measure short periods of time</p> <p><b>Use developing mathematical ideas and methods to solve practical problems</b></p>	<p>Shape, space and measures</p>	<p>Measuring</p> <p>Using and applying mathematics</p>

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
1	<p><b>Say and use the number names in order in familiar contexts.</b></p> <p>Use ordinal numbers in different contexts.</p> <p>Match sets of objects to numerals that represent the number of objects.</p>	NLC	<p>C&amp;UN</p> <p>C&amp;UN</p> <p>U&amp;A</p>	<p>Work as part of a group or class, taking turns and sharing fairly, understanding that there needs to be agreed values and codes of behaviour for groups of people, including adults and children, to work together harmoniously (PSED)</p> <p>Interact with others, negotiating plans and activities and taking turns in conversation (CLL)</p>	<p>Share, recite and encourage joining in with number rhymes and stories, using games and books.</p> <p>Celebrate number books that the children have made.</p> <p>Provide tapes and CDs of number rhymes and songs for children to listen to.</p> <p>Use photographs to make children's own number lines.</p> <p>Use washing lines for reordering numbers, finding missing numbers and matching objects to numerals.</p> <p>Through games and 'small world' play, use the language of ordinal numbers.</p> <p>Develop interactive displays of objects with number cards for matching, moving and reordering.</p> <p>Provide rich resources for number activities through number stories and rhyme sacks with resources.</p>

<p>Example of adult led activity</p>	<p><b>Context: Making number books with children</b></p> <ul style="list-style-type: none"> <li>• Make a collection of favourite number books with the children.</li> <li>• Discuss with the children what their similarities and differences are. For example: do the numbers go in order from 1 to 10? Do they go backwards or forwards? What does each book show for the number 3?</li> <li>• Encourage the children to make their own number books in pairs or groups. They will need to decide on the items they want to have a number of. A digital camera could be used for photographing, for example, fruit, children or shoes. A scanner could be used to scan in pictures from books, or children could draw their own pictures. If digital images have been used, an electronic book could be made using interactive whiteboard software or PowerPoint, or a 'talking photo album' could be used.</li> <li>• The children should share the books with each other and take turns in taking them home to share with their families.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Use puppets to demonstrate number order and number matching.</li> <li>• Model saying and using number names in a variety of contexts, for example counting plates in the role-play area, animals in 'small world' play, collections of objects and games (indoors and out).</li> <li>• Exploit opportunities for number, for example counting fruit at snack time, when registering children and when organising games.</li> <li>• Scaffold children's learning by identifying where they are in understanding of number and then planning for next steps.</li> <li>• Observe children and note possible next steps, for example counts regularly to 5; begins to match numerals to objects up to 10.</li> <li>• Share books and exploit the number potential, for example looking for number patterns and numbers of objects.</li> <li>• Encourage children to rehearse number names and order using songs, games and rhymes.</li> </ul>
--------------------------------------	--	---

<p><b>Opportunities for children to explore and apply</b></p>	<ul style="list-style-type: none"> <li>• Celebrate the children's number books in the book area for children and adults to revisit and share.</li> <li>• Where possible, set up interactive displays of the objects children used for their books, for example fruit or shoes. Make number cards that can be moved, rearranged and assigned to the objects.</li> <li>• Provide materials for children to continue making their own books alongside models.</li> <li>• Incorporate number lines into the learning environment, both inside and outside. These could be movable, for example on clips on a washing line or hanging on string so that sometimes their order can be 'muddled up' or a number can appear to be missing.</li> <li>• Make story/rhyme sacks with objects, for example plastic frogs to go with 'five little speckled frogs'. Model their use then let children use them in their play</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Use puppets to demonstrate number order and number matching.</li> <li>• Model saying and using number names in a variety of contexts, for example counting plates in the role-play area, animals in 'small world' play, collections of objects and games (indoors and outdoors).</li> <li>• Exploit opportunities for number, for example counting fruit at snack time, when registering children and when organising games.</li> <li>• Scaffold children's learning by identifying where children are in understanding of number and then planning for next steps.</li> <li>• Observe children and note possible next steps, for example counts regularly to 5; begins to match numerals to objects up to 10.</li> <li>• Share books and exploit the number potential, for example looking for number patterns and numbers of objects.</li> <li>• Encourage children to rehearse number names and order using songs, games and rhymes.</li> </ul>
<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• How do children begin to represent numbers using fingers, marks on paper or pictures? For example: Kim and Edward made a number track to 10. They then added numbers to 17 when they realised they could throw the beanbag further than they had expected.</li> <li>• Do they use number names in familiar contexts? For example: Daniel and Esther each collected a large pile of stones. Daniel said, 'I think I've got 30.' Esther replied, 'No you haven't. I've got more than you and I've counted mine and I've got 27.' They counted Daniel's pile and laughed when they realised that many of his stones were smaller and he had 42.</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• Use a number track or 'washing line' of numbers. Can children count the numbers starting at 1 or at another number? Can they place a shuffled set of numbers in order? Can children identify missing numbers? Can they say what comes next without seeing the numbers?</li> <li>• Can children work cooperatively with other children on counting activities? Do they engage willingly in problem-solving activities such as: how many of us are in this play area? How many pieces of apple do we need for a piece each?</li> <li>• Can children use number names confidently in favourite number rhymes? Can</li> </ul>

	<ul style="list-style-type: none"><li>• Can they recite the number names in sequence, counting forwards or backwards? For example: the children play a game where one of them selects and hides an object while the others close their eyes. Before they open them they count, '10, 9, 8... 0'. Are they able to sign number names in order from 1 to 10?</li></ul>	they follow a number trail or a number story?
--	---	---

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
<b>2</b>	<p><b>Use language such as 'more' or 'less' to compare two numbers</b></p> <p><b>Find one more or one less than a number from 1 to 10</b></p> <p>Sort objects, making choices and justifying decisions</p>	C	<p>C&amp;UN</p> <p>KUNF</p> <p>U&amp;A</p>	<p>Work as part of a group or class, taking turns and sharing fairly, understanding that there needs to be agreed values and codes of behaviour for groups of people, including adults and children, to work together harmoniously (PSED)</p> <p>Be confident to try new activities, initiate ideas and speak in a familiar group (PSED)</p> <p>Interact with others in a variety of contexts, negotiating plans and activities and taking turns in conversation (CLL)</p>	<p>Provide collections of objects for children to sort, match and count. Encourage children to self-register using photographs or name cards, and notice how many children there are. Share, recite and encourage joining in with number rhymes and stories using games and books. Provide tapes and CD-ROMs of number rhymes and songs for children to listen to. Use photographs in the learning environment to ask, for example, how many children are at the water? Provide opportunities to share out objects within the group, for example fruit, 'small world' toys or small equipment in the outdoor area. Develop interactive displays of objects with prompts for 'more' or 'less'. Provide rich resources for number activities through number stories and rhyme sacks with resources.</p>
<b>Example of adult led activity</b>	<p><b>Context: Setting up role-play using money</b></p> <p>Plan the role-play with the children using a visit, photograph, video or something a family have brought in as a starting point, for example a visit to a local garden centre. Ask the children to record how things are priced using photos or mark making.</p> <p>Develop the area with the children, encouraging them to make price labels. Ensure that a range of pennies is used that will involve counting out, giving one more, one less, etc. Ask the children to justify choices, for example: if 2 of those cost x should 3 cost more?</p> <p>Model being a shopkeeper and a customer asking prices, expressing difficulties as you do not have the right change. Ask the children for solutions.</p> <p>Record solutions using a variety of children's ideas, for example: I found that hard. How shall</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Pose problems and questions, for example when children are leaving a group: we had 20; one has gone; how many have we left? Use number staircases to support.</li> <li>• Encourage children to investigate. For example: there aren't enough. Do we need more?</li> <li>• Draw attention to comparisons and introduce the language of 'more' or 'less'.</li> <li>• Model sorting objects and finding 'more' or 'less'.</li> </ul>	

	<p>we help someone else who has a 10p and wants to buy something costing 8p? How could we show that to help them?</p>	
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>• Using systems for self-registration, ask the children: how many children are here today? Are there more than yesterday? How many more would need to be here for a full class?</li> <li>• Ask children to share out between a group or the class, for example by cutting and sharing fruit.</li> <li>• Use number and photo displays to organise the learning environment, for example 4 children in the role-play area; 5 saucepans on these shelves; 10 Bee-Bots in this box.</li> <li>• Children use the book area to act out or use objects to support number stories, songs and rhymes involving one 'more' or 'less'.</li> <li>• Provide a range of collections of objects.</li> </ul>	<p><b>Adult's role</b></p> <ul style="list-style-type: none"> <li>• Pose problems and questions, for example when children are leaving a group: we had 20; one has gone; how many have we left? Use number staircases to support.</li> <li>• Encourage children to investigate, for example there aren't enough. Do we need more?</li> <li>• Draw attention to comparisons and introduce the language of 'more' or 'less'.</li> <li>• Model sorting objects and finding 'more' or 'less'.</li> <li>• Exploit opportunities for problem solving when exact numbers are needed. For example: there are 3 chairs on the bus, how many more do we need?</li> <li>• Prompt questioning through number rhymes and games.</li> </ul>

<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• How do children use methods to answer a problem they have posed? For example: Colin and Ben suggest what might be done about the biscuit that is left over when everybody has had one. 'Someone else can have the extra one.' 'Get one more and then we can both have two.'</li> <li>• What is the variety of responses when children work out a calculation from a story? For example: Merrie said, 'If two more come there will be seven, because five and two make seven.'</li> <li>• Can they share objects? For example: can they share 8 crayons equally among 4 children and know that each child has 2 crayons?</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• Use activities that require limited numbers of children to see if they can work out problems. For example: how many more do we need? We have 4 aprons; is that enough?</li> <li>• Use a puppet as a prop to ask children questions about numbers from number lines, tracks and songs.</li> <li>• Observe children in practical contexts, for example a shop or café, to work out how many cakes are left after selling/eating one.</li> </ul>
-------------------------------------	---	---

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
3	Estimate how many objects they can see and check by counting  <b>Count reliably up to 10 everyday objects</b>  <b>Use developing mathematical ideas and methods to solve practical problems</b>	NLC	C&UN   C&UN   U&A	Respond in a variety of ways to what they see, hear, smell, touch and feel (CD)	Use collections of rhymes, songs, storybooks and props. Provide a variety of objects and collections for children to sort, match and incorporate into play. Use clipboards inside and outside in the learning environment and encourage children's mark making of numbers of objects. Use washing lines to match objects, and encourage children to find collections of objects to set their own challenges. Engage in games and 'small world' play throughout the day and challenge children to estimate quantities and check the number by counting, for example the number of children on the climbing frame; the number of apples in the fruit box; the number of pens in the pot. Develop interactive displays of objects with number cards for matching, moving and reordering. When tidying up, pay attention to numbers of objects, for example cutlery, construction equipment and garden tools.
<b>Example of adult led activity</b>	<p><b>Context: Using a storybook</b></p> <p>Read the story with the children, for example <i>Handa's Surprise</i>. Have a basket of the fruit, count them in the basket and illustrate the story as each one is taken. Provide opportunities for the children to retell the story, for example children telling each other from the book, using toy animals and fruit to act out the story or scan the pages of the story into interactive whiteboard software or into PowerPoint as an electronic book.</p> <p>Tell the children they can use the fruit to make fruit kebabs. (There are eight types of fruits and animals in <i>Handa's Surprise</i>. Add two to reinforce counting to 10.) Say that the kebabs can have one piece of each kind of fruit. If they don't like some of the types of fruit, they can swap them for ones they do like but they mustn't have more than the number of types of fruit available (10). Encourage their methods in problem solving to work out how many pieces of each fruit they are putting on their kebab when they are leaving some kinds out.</p> <p>Welcome the children's different ways of recording their recipes for their own kebabs. Share with them how they have represented their different types of fruit and how many they had of each. Count together and see that each kebab was</p>				<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Model counting in everyday experiences.</li> <li>• Use a puppet to count wrongly and encourage the children to correct.</li> <li>• Demonstrate counting accurately during group activities. For example: how many cups do we need? 1, 2, 3...</li> <li>• Scaffold children's learning by helping them to count accurately in their own play.</li> <li>• Participate in all areas of children's experience and model counting for a purpose. For example: how many wheels are we going to need on this car?</li> <li>• Encourage children to make guesses about</li> </ul>

	<p>made up of 10 pieces of fruit.</p> <p>Make a pictogram (could use 2count from the 2simple Infant Video Toolbox) to find out which was the favourite and which was the least favourite fruit.</p>	<p>numbers and then check. For example: let's guess how many objects there are in this box.</p>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>• In construction and 'small world' play, provide plans for models using photographs or children's own models showing numbers of objects, for example 4 wheels or 10 pieces of straight track.</li> <li>• Use photographs of numbers of objects and their numerals in the learning environment for children to collect and match when tidying, for example numbers of items of cutlery, cups and plates or construction tools.</li> <li>• Provide clipboards inside and outside in the learning environment and model uses for shopping lists, recording measurements of, for example, sunflowers growing, turn taking and children waiting, planning picnics/parties, numbers of skips or jumps or other achievements.</li> <li>• Provide a collection of counting rhymes, songs and storybooks and tapes or CD-ROMs with props. Encourage children to make their own. Model uses and encourage children to share in similar ways with each other.</li> <li>• Use interactive whiteboard software to re-create stories using numbers of objects, for example 'Goldilocks and the three bears'.</li> <li>• Make a wide variety of collections available for children to sort, match and incorporate into play, and to hide and find.</li> <li>• Model games for them, for example dropping objects into a tin and guessing their number by listening to the sounds or asking how many of each object will fit into a matchbox.</li> <li>• Use dice and domino numbers to help with the visual pattern of numbers. Children begin, for example, to see the patterns of four as two twos, and six as two threes.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Model counting in everyday experiences.</li> <li>• Use a silly puppet to count wrongly and encourage the children to correct.</li> <li>• Demonstrate counting accurately.</li> <li>• Scaffold children's learning by helping them to count accurately.</li> <li>• Participate in all areas of children's experience and model counting for a purpose. For example: how many wheels are we going to need on this car?</li> <li>• Encourage children to make guesses about numbers and then check. For example: let's guess how many objects there are there in this box.</li> </ul>

<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• Observe how children count an irregular arrangement of up to 10 objects. For example: as Zara dropped pennies noisily into the tin, she said, 'Listen for how many.'</li> <li>• Note how children count out up to six objects from a larger group. For example, when a group of children were doing a jigsaw together, they shared out the pieces and counted to check everyone had the same number.</li> <li>• Notice how children represent numbers using fingers, marks on paper or pictures. For example: Kim and Edward made a number track to 10. They then added numbers to 17 when they realised they could throw the beanbag further than they had expected.</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• Encourage children to join in rhymes and songs and notice how they are able to count, for example, five little ducks, ten green bottles, five little speckled frogs, five currant buns. Use a puppet to 'speak' and get numbers wrong, encouraging children to correct the puppet.</li> <li>• Use collections of objects and everyday materials to count, for example when tidying things back into containers or baskets.</li> </ul>
-------------------------------------	---	---

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
4	<p>Know that numbers identify how many objects are in a set</p> <p>Match sets of objects to numerals that represent the number of objects</p>	NLC	C&UN  U&A	<p>Be confident to try new activities, initiate ideas and speak in a familiar group (PSED)</p> <p><b>Attempt writing for different purposes, using features of different forms such as lists, stories and instructions (CLL)</b></p> <p>Use their imagination in art and design, music, dance, imaginative and role play stories (CD)</p>	<p>Establish role-play that has a focus on number, for example a shoe shop or grocer's shop.</p> <p>When tidying up resources make sure that, for example, jigsaw puzzles go in the right box and hats go in the dressing-up box.</p> <p>Provide clipboards and notepads next to construction and building equipment or in the outdoor area.</p> <p>Provide materials for children to make number books, for example favourite numbers or telephone numbers.</p> <p>Provide resources to support number rhymes and songs.</p> <p>Use signs around the setting to show purposeful contexts, for example a sign for the number of aprons or a large number track.</p> <p>Use stories such as <i>The Very Hungry Caterpillar</i> and <i>Goldilocks and the three bears</i> to set problems.</p> <p>Engage in cookery activities, for example following a recipe.</p>
<p><b>Example of adult led activity</b></p>	<p><b>Context: Using construction equipment</b></p> <p>Model using plans for building constructions. Make some plans using photographs of models during different stages. List what is needed using numbers next to sets of objects.</p> <p>Suggest to the children that they could make some for others to copy. Help them gather the materials they will need to make their plan: construction toys, a digital camera, paper and pencils and number cards. The children could work with a friend or in small groups.</p> <p>Discuss with the children the need to make a simple model that they will be able to take apart and make again so that they can record the different stages of building, for example a vehicle or a bug.</p> <p>Support them in recording each stage of their model making through drawings or photographs. The children can arrange these in sequence and add a list of what was needed using numbers next to sets of objects.</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Model counting and matching numerals, for example by finding a numeral card to show how many children are at an activity and putting it on a number line.</li> <li>• Scaffold children's learning in role-play activities to support and extend their language and thinking, for example encouraging them to make marks to signify how many in a set.</li> <li>• Discuss numbers of objects in real-life contexts, for example numbers of chairs at a table or how many children in a group.</li> <li>• Support children's recognition of numerals in cooking activities, for example following a recipe.</li> <li>• Create opportunities for children to be involved in making displays,</li> </ul>	

	<p>Encourage the children to have a go at making models from each other's plans. Question the children about what helped them to read the plans. For example: has your bug got the same number of eyes as the plan? How did you know how many to add?</p>	<p>for example their own pictograms of lunch choices.</p>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>Put numbers on some resources for children to count and check when they tidy up, for example 9 pieces of jigsaw in a box; 12 balls in a tub; 20 farm animals in a tin; 30 beads in a basket.</li> <li>Find real-world containers to add to role-play that have numbers on them indicating how many are inside, for example egg boxes with 6 and 12 eggs, 4 yoghurts, 6 rolls.</li> <li>In water and sand play, use containers with measurements on the side. Use containers that double in size and number them with 1, 2, 4, etc. Ask the children how many of one will fit in another. Do the numbers help?</li> <li>Use programmable toys and model giving instructions to one another to find some treasure. Use cards to support following the instructions, for example a forwards arrow displaying the number of times it is to move.</li> <li>For role-play use catalogues that show items in sets with numbers on the packets, for example 2 pairs of socks or 6 plates. Encourage children to relate to their experiences and support their mathematical language as they search through the pages. For example: are there cups sold in packs of 6 that would go with the plates?</li> <li>Provide transport tickets for role-play, showing numbers for cost, for example 5p. Encourage children to provide the correct number of pennies for each ticket.</li> <li>Provide plenty of number cards and lines inside and outside in the learning environment so they can be modelled and used spontaneously. For example: can you hop this many times (hold up a number card)?</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>Provide resources for children to make marks when playing mathematics games. Use chalkboards and clipboards in the outdoor area, for example labelling groups of objects in the role-play shop or making marks to show how many times the ball landed in the bucket.</li> <li>Encourage groups of children to set their own problems using an outdoor washing line and ranges of resources. For example: where is the numeral to describe how many children have curly hair? How many have glasses?</li> <li>Scaffold children's learning in role-play activities to support and extend their language and thinking, for example encouraging them to make marks to signify how many in a set.</li> <li>Support children's recognition of numerals in cooking activities activities, for example allowing children to follow a recipe independently.</li> <li>Remind children how many things they need to collect from home for an activity. For example: ask them to bring in five recycled materials for model making.</li> </ul>
<p><b>Look,</b></p>	<ul style="list-style-type: none"> <li>How do children count from a larger group? Do they say one number name for each person</li> </ul>	<p><b>Assessment opportunities</b></p>

<p><b>Listen and Note</b></p>	<p>before going into the hall for PE or when they find three others to be in their group of four?</p> <ul style="list-style-type: none"> <li>• Observe when and how children use number names in familiar contexts. For example: Daniel and Esther each collected a large pile of stones. Daniel said, 'I think I've got 30.' Esther replied, 'No you haven't. I've got more than you and I've counted mine and I've got 27.' They counted Daniel's pile and laughed when they realised that many of his stones were smaller and he had 42.</li> <li>• Are children beginning to represent numbers using fingers, marks on paper or pictures?</li> </ul>	<ul style="list-style-type: none"> <li>• Observe children playing with number lines, counting objects in collections and recording numerals. Ask questions such as: what should we try next? How shall we do it?</li> <li>• Observe children in role-play, for example in the café or as they label resources for the setting or for the shop.</li> <li>• Check which numbers each child can consistently recognise and match correctly to a set of objects.</li> </ul>
-------------------------------	--	---

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts	
5	<p>Count aloud in ones, twos, fives or tens</p> <p>Count repeated groups of the same size</p> <p>Observe number relationships and patterns in the environment and use these to derive facts</p> <p>Describe solutions to practical problems, drawing on experience, talking about own ideas, methods and choices</p>	NLC	<p>C&amp;UN</p> <p>C</p> <p>KUNF</p> <p>U&amp;A</p>	<p>Extend their vocabulary, exploring the meanings and sounds of new words (CLL)</p> <p>Speak clearly and audibly with confidence and control and show awareness of the listener (CLL)</p> <p>Maintain attention, concentrate and sit quietly when appropriate (PSED)</p> <p>Look closely at similarities, differences, patterns and change (KUW)</p> <p>Move with confidence, imagination and in safety (PD)</p>	<p>Sort real objects and pictures into sets of equal number while counting aloud.</p> <p>Move along an outdoor number line, for example jumping forward in twos.</p> <p>Provide help for those children who use a means of communication other than spoken English in developing and understanding specific mathematical language.</p> <p>Use groups of children to count in pairs. For example: encourage children to share small outdoor equipment in pairs.</p> <p>Engage in 'small world' play using animals or cars.</p> <p>Use washing lines for group activities or small number lines next to resources.</p> <p>Give children sufficient time, space and encouragement to use mathematical ideas, concepts and language during child-initiated activities in their own play.</p>	
<b>Example of adult led activity</b>	<p><b>Context: Real-life counting opportunities - counting wellington boots and gloves</b></p> <p>Question the children. For example: we know how many children there are in the class, but do we know how many feet/hands are in the class? Have we got enough wellington boots for all those feet? Are there enough gloves for all those hands? How could we find out? Children could make their suggestions and have a go at their solutions. They may try: matching objects to children; counting in ones, matching their counting to feet; mark making using pictures or tallies or counting in twos for each child.</p> <p>Children should share their own methods and discuss the results. Did they all get the same answer? How did they get it? What helped them? Model one or two possibilities, for example counting aloud together children's feet/hands in ones and twos. Show photographs of hands on the interactive whiteboard or on a felt board so they can be moved. Ask the children to arrange them so they can be counted easily. Count together in twos. Make mistakes, leaving</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Provide activities that are imaginative and enjoyable, for example activities that build on children's interests.</li> <li>• Use puppets to demonstrate counting along a number line.</li> <li>• Model saying and using number names in a variety of contexts, for example counting plates in the role-play area, animals in 'small world' play, collections of objects and games (indoors and outdoors).</li> <li>• Exploit opportunities for number, for example counting fruit at snack time, registering children, organising games.</li> <li>• Scaffold children's learning by identifying where they are in understanding of number and then planning for next steps. Observe children and note possible next steps, for example counts regularly to 5, begins to match numerals to objects up to 10.</li> </ul>		

	<p>out a number or adding in an odd number. Let the children correct you.</p> <p>Ask if they can work out how many fingers are on those hands. Remind them of the ways they have found useful so far: tallies, pictures, counting in sets, etc. Share results as above and count together in fives.</p>	<ul style="list-style-type: none"> <li>• Share books and exploit the number potential, for example looking for number patterns in a number rhyme book. Encourage children to rehearse number names and order using songs, games and rhymes.</li> <li>• Model mathematical vocabulary during the daily routines and throughout adult-led activities.</li> </ul>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>• Share rhymes and songs that involve counting in twos, fives and tens forwards and backwards, for example '2, 4, 6, 8, Mary at the cottage gate'; '1, 2, buckle my shoe'; '10 fat sausages sizzling in the pan'. Provide resources for retelling these rhymes independently through rhyme sacks or scanned images for the interactive whiteboard or a story board.</li> <li>• Encourage counting in groups of the same size during role-play. For example: we'll need enough for 6 of us. 2, 4, etc. If 2 can fit on each seat in the train, how many passengers can you take? 2, 4, etc. When organising groups, ask whether they can get in pairs to go to lunch. Have we got everyone? Let's see, that's 2, 4, etc.</li> <li>• Provide transparent number squares and glass beads on light boxes or OHPs for pattern making. Model covering up every other one or covering up the row of tens and counting out the pattern. Can they make their own patterns?</li> <li>• Put up pictures, for example balloons, on an interactive whiteboard or felt board and numerals in multiples of 2, 5 or 10. The objects can be sorted into sets, numbered and counted.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Provide activities that are imaginative and enjoyable, for example activities that build on children's interests.</li> <li>• Use puppets to demonstrate counting along a number line.</li> <li>• Model saying and using number names in a variety of contexts, for example counting plates in the role-play area, animals in 'small world' play, collections of objects and games (indoors and outdoors).</li> <li>• Scaffold children's learning by identifying where they are in understanding of number and then planning for next steps.</li> <li>• Observe children and note possible next steps, for example counts regularly to 5; begins to match numerals to objects up to 10.</li> <li>• Encourage children to sing rhymes and make up their own, for example changing familiar rhymes.</li> <li>• Share books and exploit the number potential, for example looking for number patterns in number rhyme books.</li> <li>• Encourage children to rehearse number names and order using songs, games and rhymes involving counting in twos, fives.</li> </ul>
<p><b>Look, Listen</b></p>	<ul style="list-style-type: none"> <li>• Observe the way children</li> </ul>	<p><b>Assessment Opportunities</b></p>

<p><b>and Note</b></p>	<p>count repeated groups of the same size. For example: how do they count the number of socks in five pairs?</p>	<ul style="list-style-type: none"> <li>• Observe children and note possible next steps, for example counts confidently in pairs; experiencing counting in fives and tens.</li> <li>• Observe children and their ability to count repeated groups of the same size, for example counting hops in ones, twos or threes.</li> <li>• Are children able to observe number patterns using number grids, number lines, games and stories?</li> <li>• Are the children able to join in rhymes such as '2, 4, 6, 8, Mary at the cottage gate'?</li> <li>• Can the children count confidently in twos (pairs)?</li> <li>• Can they count along large number tracks marked out in fives and tens?</li> <li>• Can they count on or back in tens starting from a given multiple of 10, for example start at 30 and count to 80? Do they know the next one in the sequence, for example when counting in tens what number will come after 60?</li> </ul>
------------------------	--	--

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
<b>6</b>	<p>Sort familiar objects to identify their similarities and differences</p> <p>Count how many objects share a particular property, presenting results using pictures, drawings or numerals</p> <p>Sort objects, making choices and justifying decisions</p>	NLC	<p>HD</p> <p>HD</p>	<p>Explore colour, texture, shape, form and space in two or three dimensions (CD)</p>	<p>Provide plenty of experience of sorting and classifying groups according to their own criteria to allow recognition of properties of regular shapes and other objects. Sort and classify leaves, fruit, clothing, recycled materials and natural objects according to their properties.</p> <p>Use computer programs to enable this information to be represented pictorially, for example charting eye colour, pets, favourite food or favourite colour.</p> <p>Provide collections of resources and clipboards, large pieces of paper and mark-making tools or large chalkboards.</p> <p>Use everyday activities such as snack time as a vehicle for encouraging mark making and sorting according to preference. For example: who would like apple and who would like banana?</p> <p>Use an interactive whiteboard with a variety of clip art pictures or photographs that can be moved to show the similarities and the differences between groups.</p> <p>Use collections of shapes and hoops for children to classify.</p>
<b>Example of adult led activity</b>	<p><b>Context: Collecting leaves</b></p> <p>Rake up leaves together in autumn or visit a local park. Make a collection of leaves with a variety of colours and shapes.</p> <p>Sort the leaves with the children, asking about their reasons for grouping certain leaves together.</p> <p>Describe and compare their leaves, noticing similarities of properties. Notice whether there are groups of more or fewer leaves with a particular property - count to make sure - and ask them why they think that might be. Let them select a set according to its shared property.</p> <p>Ask them if they would like to draw their leaves, spray paint over them or make leaf prints. Make a pattern of the leaves and display these alongside the leaves and</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Exploit everyday opportunities for sorting, matching and categorising things in everyday life by involving children in organising and labelling equipment, organising games, monitoring attendance, and voting to make decisions.</li> <li>• Observe children making collections of objects in their freely chosen activities and make use of these opportunities by encouraging mark making and representing the situation pictorially.</li> <li>• During real-life problems, encourage children to consider how objects may share particular properties. For example: how many children are wearing red?</li> <li>• Encourage children to explore problems, to make patterns and to count and match together.</li> <li>• Provide help for those children who use a means of communication other than</li> </ul>	

	<p>photographs of the trees. They could attach lines matching their leaves to the trees they come from.</p>	<p>spoken English in developing and understanding specific mathematical language.</p>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>• Provide model-making and pattern-making materials and work alongside children as they build. Encourage children to talk about sorting the objects for use. Discuss their reasons for choice, noticing the properties they choose.</li> <li>• Provide activities that encourage children to describe and explain, for example a 'feely bag'.</li> <li>• Make collections of natural objects for children to sort, match and describe, for example leaves, cones, shells and stones. Help them to make comparisons, and introduce mathematical language through modelling.</li> <li>• Provide a rich range of materials for pattern making both inside and outside in the learning environment.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Exploit opportunities for sorting, matching and then counting groups, for example counting fruit at snack time, registering children, organising games.</li> <li>• Observe children making collections of objects in their freely chosen activities and make use of these opportunities by encouraging mark making and representing the situation pictorially.</li> <li>• During real-life problems, encourage children to consider how objects may share particular properties. For example: how many children are wearing red?</li> <li>• Encourage children to explore problems, to make patterns and to count and match together.</li> <li>• Provide help for those children who use a means of communication other than spoken English in developing and understanding specific mathematical language.</li> </ul>

<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• How do children show curiosity and observation by talking about shapes, identifying how they are the same or why some are different? For example: Danny decided to make a box for his model. He chose a piece of card that was an appropriate shape for the base and different shapes for the sides.</li> <li>• Can children match shapes by recognising similarities and orientation? For example: when Stevie looked at a rhomboid she said 'It looks like a boat.' She picked up a triangle and observed, 'This one's different. It's only got three points.'</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• Use events such as snack time to observe how children can sort out items, for example numbers of children wanting apple or banana.</li> <li>• Observe how children begin to make pictorial representations of collections of objects.</li> <li>• During events such as snack time, do children successfully sort out items, for example for the number of children wanting apple or banana?</li> <li>• Can children identify appropriate properties and use these to sort and classify collections of objects, describing what they have done?</li> <li>• Can children sort a collection of shapes/objects according to one property and then re-sort them using a different property?</li> </ul>
-------------------------------------	--	---

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
7	<p><b>Recognise numerals 1 to 9</b></p> <p>Match sets of objects to numerals that represent the number of objects</p>	NLC	C&UN  U&A	<p>Recognise and explore how sounds can be changed, sing simple songs from memory, recognise repeated sounds and sound patterns and match movements to music (CD)</p> <p>Explore and experiment with sounds, words and texts (CLL)</p> <p>Retell narratives in the correct sequence, drawing on language patterns of stories (CLL)</p>	<p>Share number books and rhymes involving numerals, for example <i>Ten, Nine, Eight</i> by Molly Bang, and home-made number books of all kinds, for example zigzag books.</p> <p>Use resources such as number lines, tracks and staircases and interactive displays involving numerals.</p> <p>Engage children in practical activities that are underpinned by developing communication skills.</p> <p>Engage in activities that are imaginative and enjoyable and that follow children's interests.</p> <p>Exploit real-life problems. For example: how many spoons do we need for everyone in this group to have one?</p> <p>Give children sufficient time, space and encouragement to use new words and mathematical ideas, concepts and language during child-initiated activities in their own play.</p> <p>Exploit problem-solving opportunities, for example with 'small world' play.</p>
<p><b>Example of adult led activity</b></p>	<p><b>Context: Five little monkeys</b></p> <p>Share 'Five little monkeys jumping on the bed'. Sometimes alter the number to numbers under 10.</p> <p>Develop a rhyme sack including a tape of children singing, pictures, objects and numerals. Hold up a numeral and start with that many monkeys.</p> <p>Discuss making a display of the rhyme. The display could be made for a wall in the room, a shelf top, an interactive whiteboard or as an electronic talking book using software such as Textease or PowerPoint.</p> <p>Make the display with the children, encouraging them to make choices. For example: how shall we make the monkeys? Shall we use clip art or photographs of ourselves? Shall we have masks?</p> <p>Make the numerals and numbers of monkeys removable and put them in a box next to the display for the children to add and play with.</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Scaffold children's learning in role-play activities to support and extend their recognition of numerals, for example shoe sizes or labelling of items for the grocer's shop.</li> <li>• Discuss numbers of objects in real-life contexts, for example numbers of chairs at a table or children in a group. Encourage children to find the numerals from large number lines, grids or washing lines.</li> <li>• Support children's recognition of numerals in cooking activities, for example following a recipe with numbers of ingredients.</li> <li>• Create opportunities for children to be involved in making displays, for example a display about birthdays, numbers of pets, house</li> </ul>	

	<p>Demonstrate using the display to say the rhyme. Sometimes take away a number of monkeys and the matching numeral and ask: how many silly monkeys are missing today? Or muddle up the order for the children to correct.</p>	<p>numbers.</p>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>• Incorporate number lines into the inside and outside learning environment. These could be movable, for example on clips on a washing line or hanging on string, so that sometimes their order can be muddled up or a number can appear to be missing. Add bags to the number lines with numbers of objects that the children can change, for example 1, 2, 3, 4 shells or 9 shells, 8 twigs, 7 pebbles, etc.</li> <li>• Laminate photographs of the children so that they can be used in number lines outside. (Pencil will last longer in the sun than pen.) Encourage the children to think of inventive ways to show numbers of themselves, for example 1 child waiting on the bench, 2 children chatting on the bench, 3 children playing on the bench, and so on.</li> <li>• Make story/rhyme sacks with tapes, pictures, objects and numerals. Model their use and then let children use them in their play.</li> <li>• Play 'match the number'. Bury numerals in sand, two of each number. Children have to find a number then find its partner. This can be extended to finding the number that came before or the number that comes after.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Scaffold children's learning in role-play activities to support and extend their recognition of numerals, for example shoe sizes or labelling of items for the grocer's shop.</li> <li>• Support children's recognition of numerals in cooking activities, for example following a recipe with numbers of ingredients.</li> <li>• Create opportunities for children to be involved in making displays, for example a display about birthdays, numbers of pets, house numbers.</li> <li>• Observe children who notice numbers in the learning environment.</li> </ul>

	<ul style="list-style-type: none"> <li>• Make numerals using objects found outside.</li> </ul>	
<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• How do children use personal numbers such as their age, house number, number in their family, number of pets? For example: when Simeon pointed to the number 5 on the telephone, he said, 'That says five and I'm five.'</li> <li>• Take note of the numerals children recognise during number rhymes and games that they choose to play with independently.</li> <li>• Observe how children engage with songs, rhymes and stories that display numerals and question children to prompt for further information.</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• Observe how children spot numbers on calculators, tills, number tracks, clocks, books and in rhymes and the learning environment. Use these contexts to check that children can recognise all the numerals from 1 to 9.</li> <li>• Observe children during games that use a dice and a number track or number square.</li> <li>• Use a number walk around the local environment to see which numerals children recognise, for example on road signs and in shop windows.</li> </ul>

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
<p><b>8</b></p>	<p>Select two groups of objects to make a given total of objects</p> <p><b>Use developing mathematical ideas and methods to solve practical problems</b></p>	<p>C</p>	<p>KUNF</p> <p>U&amp;A</p>	<p>Interact with others, negotiating plans and activities and taking turns in conversation (CLL)</p> <p>Work as part of a group or class, taking turns and sharing fairly, understanding that there needs to be agreed values and codes of behaviour for groups of people, including adults and children, to work together harmoniously (PSED)</p> <p>Investigate objects and materials by using all of their senses as appropriate (KUW)</p> <p>Find out about, and identify, some features of living things, objects and events they observe (KUW)</p>	<p>Establish role-play that has a focus on groups of objects, for example in a shop context with collections of fruit or groceries.</p> <p>Use everyday opportunities, such as snack time, to pose problems.</p> <p>Use self-registration opportunities to ask the children a variety of questions. For example: how many are there altogether? How many more than yesterday?</p> <p>Provide collections of objects for children to sort, match and count.</p> <p>Share, recite and encourage joining in with number rhymes and stories using games and books.</p> <p>Provide tapes and CD-ROMs of number rhymes and songs for children to listen to.</p>
<p><b>Example of adult led activity</b></p>	<p><b>Context: Planting bulbs</b></p> <p>Give the children a box of 15 daffodil bulbs and a box of 15 tulip bulbs. Ask them to plant up 6 containers in as many different ways as possible. Suggest that they can plan different ways of putting the daffodils and tulips together first so they have arrangements that they like. Provide mark-making materials. The children may like to group the bulbs into different combinations or they may draw possible arrangements.</p> <p>Ask them to record how they have planted the containers to help them remember which bulbs are in each. Provide clipboards and pens. They may need some modelling or support with questions. For example: this container has 3 daffodils and 2 tulips; how could we show that?</p> <p>Share their recordings and ask questions: so have you got the same number in each?</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Model saying and using number names in a variety of contexts, for example collections of objects and games (indoors and outdoors), 'small world' figures, construction equipment and blocks.</li> <li>• Exploit opportunities for sorting, matching and then counting groups, for example counting fruit at snack time, registering children, organising games.</li> <li>• Scaffold children's learning by identifying where they are in understanding of number and then planning for next steps.</li> <li>• Observe children and note possible next steps, for example: begins to sort and group and then moves to be able to select groups of objects for a given total.</li> <li>• Share books and exploit the number potential.</li> <li>• Model using the language of addition and subtraction including 'more', 'and',</li> </ul>	

	<p>Do you prefer the colour of the tulips? Will more of those look better in the pot, or more daffodils? Which would you prefer? Did you run out of any bulbs or did you plan carefully? So you've got 3 in here altogether; how many daffodils are there?</p>	<p>'add', 'make', 'altogether', 'total', 'take away', 'how many left', etc.</p> <ul style="list-style-type: none"> <li>Look for situations where you can use words such as 'add', 'take away', 'altogether', 'more than' and 'fewer' and try to show what you mean by counting to demonstrate it.</li> </ul>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>Model mathematics games and provide for spontaneous play. For example: roll a dice and put that number of toys (bears, shells, etc.) in one of 3 containers. Children throw the dice until they have the number they need to make 5 toys in each container.</li> <li>Provide collections of objects for children to use for sorting, matching, combining and pattern making.</li> <li>Encourage children to be curious. For example: in cooking, cut open fruit and count the number of seeds. (The children may need to use a magnifying glass or a digital microscope.) Is there the same number of seeds on each side of the fruit?</li> <li>Use real-life problems. For example: we've got 28 children altogether and lots of different fruit. Which fruit shall we choose? How many pears? Does that give us the number we need? Do we need more or less?</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>Model finding totals of objects in a variety of contexts, for example collections of objects and games (indoors and outdoors), 'small world' figures, construction equipment and blocks.</li> <li>Exploit opportunities for sorting, matching and then counting groups, for example counting fruit at snack time, registering children, organising games.</li> <li>Talk about outcomes, for example 4 red bricks and 2 yellow bricks makes 6 bricks altogether.</li> <li>Observe children and note possible next steps, for example: begins to sort and group and then moves to be able to select groups of objects for a given total.</li> <li>Share books and exploit the number potential.</li> <li>Encourage children to make marks to record their findings, for example drawing their towers or making marks to show their outcomes.</li> </ul>

<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• How do children find the sum of two numbers? Adeola picked up as many conkers as she could, working out how many she had altogether: 'Five and four - nine! That's my best go.'</li> <li>• Observe the variety in responses when children work out a calculation from a story. For example: Merrie said, 'If two more come there will be seven, because five and two make seven.'</li> <li>• How do children use different methods to find a total?</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• See how children tackle problems such as putting 2 kinds of animal in a stable designed for 6 animals, or making a tower of 6 bricks using 2 colours.</li> <li>• Are children able to respond to the request, for example, to take more conkers or cotton reels or to put some back?</li> <li>• Observe the children in practical contexts using objects or by modelling with objects or apparatus. Can the children make 10 in a variety of ways by combining two or more amounts? What numbers up to 10 can they make correctly using two groups of objects?</li> </ul>
-------------------------------------	---	---

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
<b>9</b>	<p><b>Begin to relate addition to combining two groups of objects and subtraction to 'taking away'</b></p> <p><b>In practical activities and discussion begin to use the vocabulary involved in adding and subtracting</b></p> <p>Describe solutions to practical problems, drawing on experience, talking about their own ideas, methods and choices</p>	C	<p>C</p> <p>C</p> <p>U&amp;A</p>	<p>Handle tools, objects, construction and malleable materials safely and with increasing control (PD)</p> <p>Express and communicates ideas, thoughts and feelings by using a widening range of materials, suitable tools, imaginative and role-play, movement, designing and making, and a variety of songs and musical instruments (CD)</p>	<p>Establish role-play that has a focus on groups of objects, for example in a shop context with collections of fruit or groceries. Use everyday opportunities such as snack time to pose problems.</p> <p>Use self-registration opportunities to ask the children a variety of questions. For example: how many are there altogether? How many more than yesterday?</p> <p>Provide collections of objects for children to sort, match and count.</p> <p>Share, recite and encourage joining in with number rhymes and stories using games and books.</p> <p>Provide tapes and CD-ROMs of number rhymes and songs for children to listen to.</p> <p>Encourage children to make up number stories and represent them pictorially.</p>
<b>Example of adult led activity</b>	<p><b>Context: Minibeasts</b></p> <p>Look at a caterpillar and other minibeasts with children. Carefully examine them with magnifying glasses or a digital microscope. Look at their features, numbers of antennae, legs, etc. Draw or paint the minibeasts indoors and outdoors using clipboards where necessary.</p> <p>Introduce the idea of designing bugs made out of playdough. The children could draw their own design or use a computer paint program to make the design. Comment on numbers of sets in their bugs: how many legs are you going to add? It could have lots of eyes couldn't it? Will it have the same number on each side? Will it be able to balance?</p> <p>Make the bugs based on their designs. Provide a number of colours of</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Provide practical real-life activities underpinned by developing communication skills.</li> <li>• Model mathematical vocabulary during the daily routines and throughout adult-led activities.</li> <li>• Encourage children to explore objects and groups and provide resources to encourage mark making and representation, for example adding up tally marks of scores in a game.</li> <li>• Help those children who use a means of communication other than spoken English to develop and understand specific mathematical language.</li> <li>• Exploit opportunities for sorting, matching and then counting groups and totals, for example counting fruit at snack time, registering children, organising games.</li> <li>• Share books and exploit the number potential for using vocabulary of addition and subtraction.</li> </ul>	

	<p>playdough. Introduce adding and subtracting, and model the language. For example: shall I help you make the antennae? How many do you have? How many more will you need? Whoops that's too many; how many do we need to take away? Keep number lines on the table to help with adding and subtracting.</p>	<ul style="list-style-type: none"> <li>• Encourage children to choose numbers for problems and to make up their own story problems for other children to solve.</li> <li>• Model the use of vocabulary such as 'add', 'addition', 'altogether', 'and', 'total', 'take away', 'subtract', 'one more', 'one less', 'how many are left/gone', 'make', 'sum', 'is the same as', 'difference between', 'how many more than', 'count', 'group', 'count out', 'share out', 'left over'.</li> </ul>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>• Work alongside the children at 'small world' and construction play. Add and subtract pieces while using the language of addition and subtraction. For example: it might fit if we take some away. How many do you think we'll need to take away? Shall we put the people on the bus? Can we add any more? If 3 people get off here; how many passengers will be left? Have we got space for any more?</li> <li>• Use systems for self-registration and ask the children: how many are here today? If x still come in how many will be here? Now 3 people have gone out; how many are left?</li> <li>• Model mathematics games. For example: have 10 beans and a pot and work with a friend. One person decides how many to take away and the other guesses how many are left. Then they check together and swap over.</li> <li>• Model using addition and subtraction with cooking, or role-play with money, sand and water. For example: we need 3 of these and 2 of those; how many have we got altogether? Have we got too many? How many will you need to take away?</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Provide practical real-life activities underpinned by developing communication skills.</li> <li>• Model mathematical vocabulary during the daily routines and throughout adult-led activities.</li> <li>• Encourage children to explore objects and groups and provide resources to encourage mark making and representation, for example adding up tally marks of scores in a game.</li> <li>• Help those children who use a means of communication other than spoken English to develop and understand specific mathematical language.</li> <li>• Exploit opportunities for sorting, matching and then counting groups and totals, for example counting fruit at snack time, registering children, organising games.</li> <li>• Share books and exploit the number potential for using vocabulary of addition and subtraction.</li> <li>• Model the use of vocabulary such as 'add', 'addition', 'altogether', 'and', 'total', 'take away', 'subtract', 'one more', 'one less', 'how many are left/gone', 'make', 'sum', 'is the same as', 'difference between', 'how many more than', 'count', 'group', 'count out', 'share out', 'left over'.</li> </ul>

<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• How do children find the sum of two numbers? For example: Adeola picked up as many conkers as she could, working out how many she had altogether: 'Five and four - nine! That's my best go.'</li> <li>• Observe the variety in responses when children work out a calculation from a story. For example: Merrie said, 'If two more come there will be seven, because five and two make seven.'</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• Assess children's understanding when they are using everyday objects, for example counting pennies in the role-play area and seeing how many there are altogether and how many are left when some are spent.</li> <li>• In outdoor activities with small apparatus, observe how children are able to combine groups and find the total by counting on.</li> <li>• Can children solve practical problems such as: we ate 2 of our 8 jellies, so how many are left? There are 4 cars in the car park and 3 more arrive. How many are there now?</li> </ul>
-------------------------------------	--	--

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
<b>10</b>	<p>Share objects into equal groups and count how many in each group</p> <p>Describe solutions to practical problems, drawing on experience, talking about their own ideas, methods and choices</p>	C	C  U&A	<p>Have a developing awareness of their own needs, views and feelings and be sensitive to the needs, views and feelings of others (PSED)</p> <p>Recognise the importance of keeping healthy and those things which contribute to this (PD)</p>	<p>Provide resources such as number lines, tracks and staircases and interactive displays using numerals.</p> <p>Engage in practical activities that are underpinned by children's developing communication skills.</p> <p>Set sharing and grouping activities that are imaginative and enjoyable and that follow children's interests.</p> <p>Give children sufficient time, space and encouragement to use new words and mathematical ideas, concepts and language during child-initiated activities in their own play.</p> <p>Exploit problem-solving opportunities, for example with 'small world' play.</p> <p>Provide collections of objects for children to sort, match and count.</p> <p>Share, recite and encourage joining in with number rhymes and stories using games and books involving sharing and grouping.</p> <p>Use photographs in the learning environment to ask, for example, how many children at the water?</p> <p>Share out objects within the group, for example fruit.</p> <p>Develop interactive displays of objects with prompts for 'more' or 'less'.</p>
<b>Example of adult led activity</b>	<p><b>Context: Sorting fruit</b></p> <p>Collect an assortment of fresh and dried fruit (choose small fruit like cherries and raisins that won't need cutting) and one small paper cake case for each person.</p> <p>Explain that everyone will want an equal share of fruit and that you need to decide how many of each fruit to put in each case. Give pairs of children responsibility for working out how they can share equally one of the kinds of fruit. Suggest that they don't touch the fruit too much but after counting it together the children could then use beads and pots for sharing out and paper and pencils for mark making.</p> <p>Count (together and out loud) each type of fruit as you place it in a paper bag. Write the number on each bag. Encourage their different strategies and mark making, and</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Provide practical real-life activities that are underpinned by children's developing communication skills.</li> <li>• Model mathematical vocabulary during the daily routines and throughout adult-led activities. Support children who use a means of communication other than spoken English in developing and understanding specific mathematical language.</li> <li>• Encourage children to explore objects and groups and provide resources to encourage mark making and representation, for example adding up tally marks of scores in a game.</li> <li>• Exploit opportunities for sorting, matching and then counting groups and totals, for example counting fruit at snack time, registering children, organising games.</li> <li>• Share books and exploit the number potential for using vocabulary of addition and</li> </ul>	

	<p>support them in finding a solution. They may need to alter their strategy. Help them talk and think through their problem and possible solutions. Ask them for suggestions if they have some fruit left over. They may show this in their mark making. Allow the children to share out the fruit equally into paper cake cases to hand out to each child.</p>	<p>subtraction.</p> <ul style="list-style-type: none"> <li>Encourage children to choose numbers for problems and to make up their own story problems for other children to solve.</li> </ul>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>Add trays with small compartments for sorting to the making area. Add collections of things: bottle tops, sequins, threads, tiny pieces of fabric, etc. Model sharing out the objects equally. For example: do you all want sequins? I'll put 5 each on your trays. Can you give everybody the same number of these? Have you got the same?</li> <li>Add objects into role-play that fit back into sets when tidying up. For example: each cot has 2 blankets and 1 sheet. Each pet has 3 biscuits in its bowl, and so on.</li> <li>Hang up 3 bags outside for making collections. Put a number 2 on each bag. Encourage the children to collect 2 of any treasured object in each bag, for example fir cones or smooth pebbles. The collections could be used inside and outside in the learning environment for different purposes, for example as a gallery of natural objects or for adding to the making area.</li> <li>Tidy up the pencil pots, making sure each pot contains the same number of pencils of each colour.</li> <li>Encourage the children to hand out things to others, for example enough pencils for each group.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>Provide practical real-life activities that are underpinned by children's developing communication skills.</li> <li>Model mathematical vocabulary during the daily routines and throughout adult-led activities.</li> <li>Encourage children to explore objects and groups and provide resources to encourage mark making and representation, for example adding up tally marks of scores in a game.</li> <li>Provide help for those children who use a means of communication other than spoken English in developing and understanding specific mathematical language.</li> <li>Exploit opportunities for sorting, matching and then counting groups and totals, for example counting fruit at snack time, registering children, organising games.</li> <li>Share books and exploit the number potential for using vocabulary of addition and subtraction.</li> <li>Encourage children to choose numbers for problems and to make up their own story problems for other children to solve.</li> </ul>

<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• How do children find the sum of two numbers? Adeola picked up as many conkers as she could, working out how many she had altogether: 'Five and four - nine! That's my best go.'</li> <li>• Observe the variety in responses when children work out a calculation from a story. For example: Merrie said, 'If two more come there will be seven, because five and two make seven.'</li> <li>• How do children count in steps/groups of, for example, 2 or 10 from given numbers and make use of this when solving problems?</li> <li>• How do children use the language associated with sharing out quantities into different groups?</li> <li>• How do children solve practical problems and puzzles and respond to questions such as 'How did you do that?' or 'Why have we got in a muddle with this?'</li> </ul>	<p><b>Assessment opportunities</b></p> <ul style="list-style-type: none"> <li>• Observe how children use everyday objects, for example counting pennies in the role-play and seeing how many there are altogether and how many are left when some are spent.</li> <li>• In outdoor activities with small apparatus are children able to solve practical problems, describing their solutions, for example sharing a number of objects equally into a given number of groups? Do they use appropriate strategies?</li> </ul>
-------------------------------------	--	---



	<p>objects. Display the children's shape patterns with the objects alongside and encourage them to match the silhouettes to the objects. Provide cards and mark-making tools for labelling their shapes or patterns.</p>	<p>'symmetrical', 'pattern', 'repeating pattern', 'match', 'flat', 'curved', 'straight', 'round', 'hollow', 'solid', 'corner', 'face', 'side', 'edge', 'end', 'sort', 'make', 'build', 'draw' and names of 2-D shapes (circle, triangle, square, rectangle, star) and 3-D shapes (cube, pyramid, sphere, cone).</p>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>• Provide model-making and pattern-making materials and work alongside children as they build. Encourage children to talk about what they are doing/have done when they make models and create patterns. Model familiar language as you work alongside them. For example: can you pass me a circle? You're making that much bigger aren't you? I like the way you've put a cone on top.</li> <li>• Provide activities that encourage children to describe and explain, for example a 'feely bag'.</li> <li>• Make collections of natural objects for children to sort, match and describe. Help them make comparisons, and introduce mathematical language through modelling and recasting their sentences, for example: It is fat yes...and big...bigger than this one.</li> <li>• Provide a rich range of materials for pattern making, both inside and outside.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Model pattern making using materials, and use the language of shape. For example: these shapes fit together well; can you make your shapes fit?</li> <li>• Exploit opportunities for noticing shapes in the learning environment that happen spontaneously, for example cutting fruit, shapes children make with their bodies, looking through catalogues.</li> <li>• Scaffold children's learning by identifying how children's understanding of pattern making and shape is developing. For example: children who are noticing how shapes fit together can be introduced to more complex shapes and patterns.</li> <li>• Use photographs and pictures and patterns from magazines as stimulus.</li> <li>• Allow children to explore freely the use of a drawing program to make their designs, and encourage them to save and store it for future work.</li> </ul>
<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• How do children select a particular named shape? For example: Rachel said, 'I chose the box to print with. See, I put that side in the paint and made a square.'</li> <li>• Observe how children match some shapes by recognising similarities and</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• Assess how children choose shapes in a computer drawing program to make a picture or pattern and note the language they use to describe their work.</li> <li>• Note the language that children use when talking about and comparing solid objects and flat shapes. For example: uses words such as 'shape', 'flat', 'curved', 'round', 'straight', 'corner', 'side', 'end', 'roll', 'slide'.</li> <li>• Observe children when using textiles, clay, natural and man-made objects, counters, 2-D shapes and computer programs or</li> </ul>

	<p>orientation. For example: Stevie looked at a rhomboid and said, 'It looks like a boat.' She picked up a triangle and said, 'This one's different. It's only got three points.'</p>	<p>other media.</p> <ul style="list-style-type: none"><li>• Note how children spontaneously notice shapes and patterns in the learning environment.</li><li>• Do children respond successfully to questions such as 'Why do you think this shape will fit into the hollow?' 'How will you know it's a triangle in the feely bag?' 'How can we find out how many corners this shape has?' 'What happens when you put these two shapes together?'</li><li>• Can children describe how one given shape is different from another given shape?</li></ul>
--	---	--

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
12	<p><b>Use everyday words to describe position</b></p> <p><b>Use developing mathematical ideas and methods to solve practical problems</b></p>	SSM	US  U&A	<p>Interact with others, negotiating plans and activities and taking turns in conversation (CLL)</p> <p>Find out about and identify the uses of everyday technology and use information and communication technology and programmable toys to support their learning (KUW)</p>	<p>Use remote control vehicles or programmable toys in an outdoor roadway and car park.</p> <p>Create a 'treasure hunt' by making up a parcel or use a soft toy and hide it in the outdoor area. Use positional words as clues. Extend the activity by drawing maps of where the treasure was found.</p> <p>Use groups of children in a large space and encourage them to follow instructions that describe position, direction and movement.</p> <p>Use 'small world' play, particularly in a house or farm context, for example using the room structure to describe where people or animals are located.</p> <p>Resource an outdoor area with bricks and recycled boxes and encourage the children to build a town structure.</p> <p>Introduce 'small world' figures and discuss where they could be positioned. Develop the activity by introducing a 'position spinner' labelled 'under', 'over', 'next to', 'behind', 'in front', 'between' to decide where the figures should be put.</p> <p>Exploit opportunities within the group. For example: who is sitting next to you, behind or in front of you?</p> <p>Use the location of resources in the setting, for example 'on' the shelves, 'in' cupboards, the bricks go 'on top' of one another.</p> <p>Use games which have mazes and tracks, possibly drawn in the outdoor space, for example a track around the outdoor play space.</p> <p>Use stories, songs and rhymes such as Rosie's Walk, Bear Hunt and Where's Spot?.</p> <p>Encourage children to make their own books or models with flaps or separate sections.</p> <p>Role-play with large blocks and materials.</p>
<p><b>Example of adult led activity</b></p>	<p><b>Context: Roadways</b></p> <p>Help the children to make a path between blocks to create roadways for their remote control vehicles. Support their ideas and help them work collaboratively to develop the roadways.</p> <p>Suggest that there could be a car park at one end. Model the use of positional language. For example: shall I put this block on top of this one? Can you fit one behind to make it stronger?</p> <p>They may wish to add a local building or incorporate photographs from the local environment. Ask the children if they can drive safely down the roads to the car park. In the car park, encourage their use of positional language. For example:</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>Plan games with transport and outdoor equipment to support the use of positional language.</li> <li>Model the use of positional language by using descriptions to help locate objects, for example: can you find the pens that are behind the blocks?</li> <li>Use books, stories and rhymes to introduce language of position, and use appropriate questioning to encourage children to describe the position of objects.</li> <li>Exploit opportunities for noticing position in the environment that happen spontaneously, for example where things are hidden in a sand pit, where to find outdoor equipment or where to see their friends or other members of staff. Set challenges such as encouraging children to describe to each other where things are located. Use photographs, pictures and patterns from magazines as stimulus and describe the language of position. .</li> </ul>	

	<p>can you park next to the blue car? There are so many cars, will any more fit behind, in front? Ask the children to be the car park attendants helping people to park their cars. Support the children in giving instructions to each other to park their cars so that they all fit in the car park.</p>	<ul style="list-style-type: none"> <li>Model the use of appropriate language such as 'position', 'over', 'under', 'above', 'below', 'top', 'bottom', 'side', 'on', 'in', 'outside', 'inside', 'around', 'in front', 'behind', 'front', 'back', 'before', 'after', 'beside', 'next to', 'opposite', 'apart', 'between', 'middle', 'edge', 'corner', 'direction', 'left', 'right', 'up', 'down', 'forwards', 'backwards', 'sideways', 'across', 'close', 'far', 'near', 'along', 'through', 'to', 'from', 'towards', 'away from', 'movement', 'slide', 'roll', 'turn', 'stretch', 'bend'.</li> </ul>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>Be a robot and ask children to give you instructions to get to somewhere. Let them have a turn at being the robot for you to give instructions to.</li> <li>Use positional language when creating scenes in software on the computer or on an interactive whiteboard. For example in designing a park: are you going to put the bench in front of the swings? Have you hidden the child behind the tree?</li> <li>Use positional language in 'small world' play. For example using farm animals with small blocks: shall we hide the sheep inside the barn? Look it's on top of the roof. Cover your eyes and encourage the children to tell you where the animals are.</li> <li>Hide an object and say that the children have to ask where it is without moving. For example: is it under the tree? Is it behind the shed? When a child gets it right they hide the object and everyone else guesses.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>Plan games with transport and outdoor equipment to support the use of positional language.</li> <li>Model the use of positional language by using descriptions to help locate objects. For example: can you find the pens that are behind the blocks?</li> <li>Use books, stories and rhymes to introduce language of position, and use appropriate questioning to encourage children to describe the position of objects.</li> <li>Provide photographs and selections of pictures and patterns from magazines as a stimulus in the graphics area.</li> <li>Provide mark-making equipment and large paper for children to draw maps and plans that represent their homes, their way to the setting or their position in the outdoor area.</li> <li>Model the use of appropriate language such as 'position', 'over', 'under', 'above', 'below', 'top', 'bottom', 'side', 'on', 'in', 'outside', 'inside', 'around', 'in front', 'behind', 'front', 'back', 'before', 'after', 'beside', 'next to', 'opposite', 'apart', 'between', 'middle', 'edge', 'corner', 'direction', 'left', 'right', 'up', 'down', 'forwards', 'backwards', 'sideways', 'across', 'close', 'far', 'near', 'along', 'through', 'to', 'from', 'towards', 'away from', 'movement', 'slide', 'roll', 'turn', 'stretch', 'bend'.</li> </ul>
<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>How do children find items from positional or directional clues? For</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>During everyday activities, observe how children spontaneously use the language of position. For example: Harriet said, 'Our dog sleeps</li> </ul>

	<p>example: Bahar said to the practitioner, 'I came from my cousin's house today. We had to come round the park and past the shops.'</p>	<p>under the radiator.'</p> <ul style="list-style-type: none"> <li>• Note when a child uses the language of position in everyday play, for example 'the sheep is behind the cow.'</li> <li>• Are children able to follow instructions in physical activities? For example: can they find a place which is 'under'?</li> <li>• Through the use of programmable toys, can children demonstrate their understanding of position, direction and movement? For example: Danny is using the pixie and notices that it is going forward under the table.</li> <li>• Do the children use the language of position in everyday play? For example: the sheep is behind the cow.</li> <li>• Are children able to describe how things are stored on shelves in the classroom or in a cupboard? For example: the felt pens are under/on top of/next to the books. Can children describe position accurately, for example where the stapler is?</li> <li>• Can they respond successfully to questions such as 'Can you explain how you found it?' or 'Can you describe which way you went?'</li> <li>• Are they able to record their position or movement with practical equipment or drawings?</li> </ul>
--	--	--

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts
13	<p><b>Use language such as 'greater', 'smaller', 'heavier' or 'lighter' to compare quantities</b></p> <p>Sort objects, making choices and justifying decisions</p>	SSM	M  U&A	<p>Handle tools, objects, construction and malleable materials safely and with increasing control (PD)</p> <p>Build and construct with a wide range of objects, selecting appropriate resources, and adapting their work where necessary (KUW)</p> <p>Select and use activities and resources independently (PSED)</p>	<p>Provide a context for discussion of sizes and weights in sand and water play.</p> <p>Engage in cooking activities with simple easily readable scales for weighing and measuring and a variety of containers.</p> <p>Use balance scales with collections of objects.</p> <p>Provide malleable materials and collections of objects such as measuring spoons and jugs.</p> <p>Provide a variety of resources such as ribbons and lengths of paper.</p> <p>Engage in role-play activities with weighing equipment, for example a DIY shop.</p>
<p><b>Example of adult led activity</b></p>	<p><b>Context: Reading <i>The Gigantic Turnip</i> by Aleksei Tolstoy and Niamh Sharkey</b></p> <p>Show the children a bag of vegetables, including a turnip. Ask them to guess what vegetable is coming out of the bag. Give them clues: it's round and large. It's smaller than the carrot, etc. Take out the vegetables one by one, naming them as you do so.</p> <p>Read <i>The Gigantic Turnip</i>. Talk about how heavy and huge the turnip was and how many people and animals were needed to pull it from the ground. One outcome could be making vegetable soup using root vegetables.</p> <p>Support the children in making up their own recipe for vegetable soup using the vegetables brought in but deciding on what they would like to add and how many. Talk about the vegetables as the children handle them and encourage them to describe and compare them using the language of quantity. Put clipboards near the children and ask them to record their recipe as they make their soup so they don't forget what they added and it can be made again.</p>			<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• During everyday activities, encourage children to describe using appropriate language. For example: who has the longest banana?</li> <li>• Model mathematical vocabulary during activities, for example cookery and role-play activities and use the appropriate vocabulary for:                         <ul style="list-style-type: none"> <li>➤ length, including: 'measure', 'size', 'compare', 'too many', 'too few', 'nearly', 'just over', 'just under', 'length', 'width', 'height', 'depth', 'long', 'short', 'tall', 'longer', 'shorter', 'taller', 'higher', 'longest', 'shortest', 'tallest', 'highest'</li> <li>➤ mass, including 'weigh', 'weighs', 'balances', 'heavy/light', 'heavier/lighter', 'heaviest/lightest', 'balance', 'scales', 'weight'</li> <li>➤ capacity, including 'full', 'half full', 'empty', 'holds', 'container'.</li> </ul> </li> <li>• Encourage children to explore problems, to make patterns and to count and</li> </ul>	

		<p>match together.</p> <ul style="list-style-type: none"> <li>• Provide help for those children who use a means of communication other than spoken English in developing and understanding specific mathematical language.</li> </ul>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>• Add weighing and balance scales to sand inside and outside, along with containers of different sizes. Pose problems such as: can you make a container as heavy as this one? I wonder if we can make one heavier.</li> <li>• Provide collections of all kinds for children to sort, match and use to fill containers.</li> <li>• Provide 'cooking' activities in the role-play area, for example making playdough. Use scales, measuring spoons, etc.</li> <li>• Have a role-play post office with scales for measuring weights. Help the children to make charts that relate the weight to postage costs and stamps.</li> <li>• Make junk and construction models, comparing sizes and weights of objects used.</li> <li>• Use collections of different materials in the making area. Help children choose what they need using the language of quantities. For example: do you need a bigger one? This is smaller; try this.</li> <li>• Play a game of lining up objects according to their estimated size or weight.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>• Give children sufficient time, space and encouragement to use new words and mathematical ideas, concepts and language during child-initiated activities in their own play.</li> <li>• Encourage children to explore problems involving size, weight and measure through appropriate questioning. For example: how full will this bottle be? How far can you spread that ribbon?</li> <li>• Encourage children to make up games outdoors that focus on using length, weight and height, for example throwing the ball or drawing chalk lines.</li> <li>• Model mathematical vocabulary during activities, for example cookery and role-play activities and use the appropriate vocabulary for:             <ul style="list-style-type: none"> <li>• length, including: 'measure', 'size', 'compare', 'too many', 'too few', 'nearly', 'just over', 'just under', 'length', 'width', 'height', 'depth', 'long', 'short', 'tall', 'longer', 'shorter', 'taller', 'higher', 'longest', 'shortest', 'tallest', 'highest'</li> <li>• mass, including 'weigh', 'weighs', 'balances', 'heavy/light', 'heavier/lighter', 'heaviest/lightest', 'balance', 'scales', 'weight'</li> <li>• capacity, including 'full', 'half full', 'empty', 'holds', 'container'.</li> </ul> </li> </ul>

<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• Observe the way children can order two items by length or height. For example: when Jade took the longest zip from the collection, she placed it against the others' clothes, saying, 'Too long for your dress. Too long for your coat.'</li> <li>• Observe how children understand and sometimes use the appropriate language to compare quantities. For example: the language children use during a focused activity comparing the mass of different materials or the capacity of two containers.</li> <li>• Notice how children make comparisons when making items out of malleable materials, for example playdough 'snakes'.</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• Observe how children understand and sometimes use the appropriate language to compare quantities. For example: the language children use during a focused activity comparing the mass of different materials or the capacity of two containers.</li> <li>• Notice how children make comparisons when making items out of malleable materials, for example playdough 'snakes'.</li> <li>• Note the way children find, pick out or make objects that are taller, shorter, wider, thinner, heavier or lighter than a given one. For example: a ribbon in the 'ribbon shop'; a shell that is lighter than this one; a container that holds more than this.</li> </ul>
-------------------------------------	---	---

Overview	Objectives	FS Aspect	RF Strand	Related Early Learning Goals	Possible Contexts	
14	Use everyday language related to time; order and sequence familiar events and measure short periods of time  <b>Use developing mathematical ideas and methods to solve practical problems</b>	SSM	M    U&A	Have a developing respect for their own cultures and beliefs and those of other people (PSED)  Find out about past and present events in their own lives, and in those of their families and other people they know (KUW)	Try sequencing pictures or photographs taken from real-life activities. Develop calendar activities, such as noting the days when certain events take place, keeping a weather chart, noting birthdays and significant events. Use stories such as <i>The Very Hungry Caterpillar</i> , <i>The Bad Tempered Ladybird</i> , <i>Goodnight Owl</i> and <i>Can't You Sleep Little Bear?</i> Use timers to build awareness of the duration of time. For example: can you get tidied up before the sand runs through the timer? Engage parents in discussing key events and times of the day with children. Use the language of clocks in rhymes and stories, for example 'Hickory Dickory Dock'. Note key times during the day, for example lunchtime, home-time and bedtime. Make time lines to show a variety of events and activities throughout a day, a week or a weekend. Use the outdoor environment to observe changing seasons, growing plants and seeds.	
<b>Example of adult led activity</b>	<b>Context: Sequencing pictures</b>  Ask the children to bring in photographs of when they were babies and a present-day photograph. Put the photographs on display and play games like 'Guess who'. Include adults from the school. Talk about when they were babies and ask them about growing up and what changes have happened, for example that they've got bigger, could crawl and can now walk, skip, etc.  Draw a time line and position a baby photograph at one end and a present-day photograph at the other (you could use an interactive whiteboard so that the photographs can be moved around and repositioned). With the children's help, draw lines in-between and write the years. Measure the lines in-between and say you are making them the same length, as a year is the same length as another year.  Ask the children for ideas about what they could do when they were aged 1, 2,			<b>Adult role</b>  <ul style="list-style-type: none"> <li>Plan for practical activities that are underpinned by children's developing communication skills. Exploit real-life problems. For example: setting the timer for cookery activities or noticing when it is time for lunch or for key people to arrive.</li> <li>Model mathematical vocabulary during the daily routines and throughout adult-led activities. For example: setting the timer for tidying up and talking through the amount of time left, sequencing activities from photographs.</li> <li>Model using the language of time including the names of the days of the week, 'day', 'week', 'birthday', 'holiday', 'morning', 'afternoon', 'evening', 'night', 'bedtime', 'dinnertime', 'playtime', 'today', 'yesterday', 'tomorrow', 'before', 'after', 'next', 'last', 'now', 'soon', 'early', 'late', 'quick', 'quicker', 'quickest', 'quickly', 'slow', 'slower', 'slowest', 'slowly', 'old', 'older', 'oldest', 'new', 'newer', 'newest', 'takes longer', 'takes less time', 'hour', 'o'clock', 'clock', 'watch', 'hands'.</li> <li>Give children sufficient time, space and encouragement to use 'new' words and mathematical ideas, concepts and language during child-initiated activities in their own</li> </ul>		

	<p>etc. Make a list of words in the appropriate year in the time line.</p> <p>Ask the children to make their own time line to represent their growing up, using their photographs and drawings of one thing they were able to do at each year. Extend by sequencing other stages of growth, for example plants and animals. Provide muddled-up pictures for arranging in order.</p>	<p>play, for example closing and opening times in role-play shops</p> <ul style="list-style-type: none"> <li>Encourage children to explore problems. For example: how long will it take to get Bee-Bot from here to the other side of the path?</li> </ul>
<p>Opportunities for children to explore and apply</p>	<ul style="list-style-type: none"> <li>Provide opportunities for ordering and sequencing using photographs, pictures and children's drawings. For example: cooking, following a recipe card, instructions for washing hands or getting changed for PE, or how they planted bulbs or made a model.</li> <li>Put a clock at children's height in role-play areas.</li> <li>Use sand timers to help children measure time when they are waiting turns.</li> <li>Talk regularly about events the children experience today, yesterday and tomorrow.</li> <li>Use timers in games. For example: how many times do you think you can skip in one minute?</li> <li>Refer to the time throughout everyday experiences and point out to the children how you know, for example, that in 5 minutes it will be time for lunch break: I'll know when it's 5 minutes by looking at the clock and seeing where the hands are pointing/numbers are.</li> </ul>	<p><b>Adult role</b></p> <ul style="list-style-type: none"> <li>Plan for practical activities that are underpinned by children's developing communication skills.</li> <li>Exploit real-life problems. For example: setting the timer for cookery activities or noticing when it is time for lunch or for key people to arrive.</li> <li>Model mathematical vocabulary during the daily routines and throughout adult-led activities. For example: setting the timer for tidying up and talking through the amount of time left, sequencing activities from photographs.</li> <li>Model using the language of time including the names of the days of the week, 'day', 'week', 'birthday', 'holiday', 'morning', 'afternoon', 'evening', 'night', 'bedtime', 'dinnertime', 'playtime', 'today', 'yesterday', 'tomorrow', 'before', 'after', 'next', 'last', 'now', 'soon', 'early', 'late', 'quick', 'quicker', 'quickest', 'quickly', 'slow', 'slower', 'slowest', 'slowly', 'old', 'older', 'oldest', 'new', 'newer', 'newest', 'takes longer', 'takes less time', 'hour', 'o'clock', 'clock', 'watch', 'hands'.</li> <li>Give children sufficient time, space and encouragement to use new words and mathematical ideas, concepts and language during child-initiated activities in their own play, for example closing and opening times in role-play shops. Encourage children to explore problems. For example: how long will it take to get Bee-Bot from here to the other side of the path?</li> <li>Provide help for those children who use a means of communication other than spoken English in developing and understanding specific mathematical language.</li> </ul>

<p><b>Look, Listen and Note</b></p>	<ul style="list-style-type: none"> <li>• Observe how children identify a mathematical problem involving shape, space or measures and search for a way to solve it. For example: when Dougal searched for a cube among the modelling materials he said, 'We want to make a dice, so it has to have six sides for all the spots.'</li> <li>• Observe how children use language related to time in everyday classroom situations and related tasks.</li> <li>• Observe children working on involving sequencing of pictures or photographs of events and real-life activities.</li> <li>• Observe how children respond to time-related questions using stories and rhymes.</li> </ul>	<p><b>Assessment Opportunities</b></p> <ul style="list-style-type: none"> <li>• During everyday activities, observe how children spontaneously use the language of time.</li> <li>• Are children able to follow instructions relating to timed events?</li> <li>• Through the use of programmable toys children can demonstrate their understanding of position, direction and movement. For example: Danny is using the pixie and notices that it is going forward under the table.</li> <li>• Can children respond to questions such as: 'What happens next in the story?' 'Does it take longer to walk to the shops or to the park?' 'Which day comes after Friday?' Can children make timelines sequencing familiar events and activities?</li> </ul>
-------------------------------------	--	---