**Mathematics – Nursery**

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|  | **Stage 1****Pupils will be taught to:** | **Stage 2** **Pupils will be taught to:** | **Stage 3****Pupils will be taught to:** |
| **Number** | **Recite numbers past 5.**\* Sing a range of number songs, counting forwards and backwards.\* Invite the children to join in counting how many children are in key group/lining up.\* Encourage children to count when playing hide and seek.\* Countdown from 5 (then 10) to start a race/activity.Ten Town  | **Develop fast recognition of up to 3 objects, without having to count them individually (‘subitising’).**\* Point to small groups of two or three objects: “Look, there are two/three!”\* When playing alongside children, ask how many toys/resources there are in a small set of two or three.\* Play circle games with large dice.\* Play board games with dice.Ten Town  | **Link numerals and amounts up to 5.** \* During group time, provide opportunities for the children to link numerals and amounts such as putting the corresponding quantity of gold coins in numbered treasure chests, or the correct quantity of spots on a numbered ladybird.\* Draw children’s attention to numerals that have been placed in the environment such as a pot for scissors with the numeral 5 on it and invite the children to place the correct quantity of scissors in the pot.Ten Town  |
| **Say one number for each item in order: 1,2,3,4,5.**\* Demonstrate how to count fixed and moveable objects using 1:1 correspondence and invite the children to practice during group activities and in a variety of situations during provision. | **Show ‘finger numbers’ up to 5.****\*** Model using fingers to represent how many when counting. Encourage the children to show how many using their fingers.**\*** Revisit number songs and learn new ones, emphasising the children’s use of their fingers to represent total/quantity.\* Create a class display showing fingers and objects 1-10. | **Experiment with their own symbols and marks as well as numerals.**\* During group time, organise group games and encourage children in their own ways of recording, for example, how many balls they managed to throw through the hoop, providing numerals in the environment for reference.\* Set up a role-play shop and invite the children to use their own marks/symbols to record how many items there are in a shopping basket. |
| **Know that the last number reached when counting a small set of objects tells you how many there are in total (‘cardinal principle’).**\* Model counting things and then repeat the last number. For example: “1, 2, 3 – 3 cars”. Point out the number of things whenever possible, for example, ‘two chairs’, ‘three apples’, ‘four children’.\* During group activities, invite the children to count out a small number of objects, empahsising the total number, for example, ‘please get me 1, 2, 3 - 3 chunks of carrot for out soup.’ | **Compare quantities using language: ‘more than’, ‘fewer than’.**\* During group time, give children a themed ‘number mess’ tray to explore and point out when someone has more/fewer, for example, ‘Look, Nevaeh has more penguins than Michael.’\* During provision, point out situations where children have more/fewer, for example, ‘Ronnie has 3 strawberries, Reagan has two. That means Ronnie has more.’ Invite the children to say when they have more of fewer of items.\* Sing number songs and rhymes which add on or take away and talk about more and fewer.\* Read stories such as ‘The Gingerbread Man’ that count on one more each time. | **Solve real world mathematical problems with numbers up to 5.**\* Provide opportunities for problem solving during group time, such as ‘There are four of you, but there aren’t enough chairs. What should we do?’\* Provide activities at group time and during provision that support children’s problem-solving using their fingers, objects and marks. |
| **Shape** | **Explore 2D and 3D shapes and begin to be able to name them.**\* Provide a range of resources such as blocks, shapes, shape puzzles and shape-sorters and support the children to play with them.\* Introduce a different 2D shape each session using the 2D Shapes Songs and encourage the children to learn the songs.\* Play a 2D shape ‘corners’ game.\* Play the 2D Shapes Bingo and Monsters game.\* Make shape pizza using muffin bases, cheese triangles, squares of ham and rectangles of pepper.\* Introduce and name some 3D shapes. Play a ‘Kim’s game’ to support the children remember the names. \* Invite the children to print/imprint with 3D shapes and ask what 2D shapes they have made.\* Read ‘Harry and the Robots’ by Ian Whybrow and talk about the 3D shapes Harry uses to make his robots. Give the children some junk modelling materials in 3D shapes and invite them to make a robot of their own. Talk to them about the 3D shapes they are using as they work. \* Use tidy-up time to match blocks to silhouettes or fit things in containers, describing and naming shapes, for example, ‘where does this cylinder go?’ | **Talk about and explore 2D and 3D shapes using informal and mathematical language:****‘sides’, ‘corners’; ‘straight’, ‘flat’, ‘round’.** \* Provide trays of 2D and 3D shapes for the children to explore and create with. As they play, comment on the properties of the shapes such as ‘this one has a sharp point’, ‘this one has no straight edges.’\* Play feely bag games with 2D and 3D shapes and invite the children to describe what they can feel in the bag for the others to guess, for example, ‘This shape has 3 pointy corners, what is it?’ \* Invite the children to become shape detectives and look for 2D and 3D shapes in the environment. | **Select shapes appropriately.****Combine shapes to make new ones.**\* Provide a variety of construction materials like blocks, interlocking bricks, den-making materials and support the children to play with these materials, outdoors and inside. When appropriate, talk about the shapes and how their properties suit the purpose.\* Share the story ‘Ship Shapes’ and talk about the shapes that the children can see in the book. Demonstrate how some shapes fit together to make new ones, such as two semi circles to make a circle.\* Provide shapes that combine to make other shapes, such as pattern blocks and interlocking shapes, for children to play freely with. When appropriate, discuss the different designs that children make.\* Challenge the children to make a pirate ship using 2D and 3D shapes. |
| **Measure** | **Make comparisons between objects relating to size.**\* Share the story ‘Where’s My Teddy’ by Jez Alborough. Discuss with the children the difference in size between the bear and Freddy using language of comparison.\* During group time and in provision, offer experiences of size changes such as stretching and squeezing things. | **Make comparisons between objects relating to weight and capacity.**\* Share the story Goldilocks and the Three Bears. Provide three bowls of different sizes and talk about the difference in capacity. Measure how much using porridge oats and cups. Provide a tray of oats, cups, bowls and spoons of different sizes for the children to explore. \* Talk about how Goldilocks was too heavy for Baby Bear’s chair. Invite the children to make a chair for baby bear that can support both light and heavy objects.  | **Make comparisons between objects relating****to length and height.**\* Share the story ‘Titch’ by Pat Hutchins and talk to the children about the difference in height between Titch and his siblings. Use comparative language when talking about the difference between length of the various objects in the story.\* Remind the children of the story ‘Jack and the Beanstalk’. Show children a giant footprint and model measuring it using different methods, for example, interlocking cubes or string cut the length, emphasising the need for accuracy. Invite the children to draw round and measure their own footprint to compare with the giant’s. |
| **Position** | **Understand position through words alone with no pointing.**\* Provide opportunities to use positional language during provision.\* Play hide and seek and model saying spatial words, for example, ‘Look, Harry is under the table’. \* Share the story Rosie’s Walk and encourage the children to talk about the route Rosie took around the farmyard using positional language and spatial words, including ‘in’, ‘on’, ‘under’, ‘up’, ‘down’, ‘besides’ and ‘between’.\* Invite the children to set up a train track or water chute, encouraging them to talk about the position of the pieces as they build. | **Discuss routes and locations, using words like ‘in front of’ and ‘behind’**.\* Share the story ‘We’re Going on an Easter Egg Hunt’ by Laura Hughes and talk about the position of the eggs.\* Set up an Easter egg hunt outdoors and invite the children to say where they found their eggs. | **Describe a familiar route.**\* Take children out to the park. Talk about the route as they are walking. When back at school, invite the children to recall the route and the order of things seen on the way. Use photographs and drawing to record the route.\* Invite the children to set up their own obstacle courses and describe them to their friends. |
| **Pattern** | **Talk about and identify the patterns around them.** \* Read ‘My Mum and Dad Make Me Laugh’ by Nick Sharratt and talk about the patterns liked by mum and dad.\* Provide a basket of fabric for the children to explore and invite them to describe the patterns they see using words such as ‘spotty’, ‘stripy’ etc.  | **Extend and create ABAB patterns.**\* Introduce repeating patterns using body movements such as clap,clap, stamp, stamp, clap, clap.\* Show the children examples of simple repeating patterns \* Invite the children to make repeating patterns outdoors with natural objects such as sticks, stones and leaves.\* Invite the children to decorate an Easter egg with a repeating pattern using coloured paper or finger paints. | **Notice and correct an error in a repeating pattern.**\* Invite the children to make a bee using black and yellow strips of paper in a repeating pattern. Encourage them to notice if the pattern is incorrect and correct it accordingly.\* Provide a range of peg boards and pattern making resources and invite the children to make repeating patterns. Show them patterns that deliberately incorrect for them to notice and correct. |
| **Time** | **Begin to describe a sequence of events.**\* At the beginning of each session, run through the planned activities using a visual timetable and saying, for example, ‘first we do group time, then we choose a job’.\* Use a class calendar to display the days of the week and talk about ‘yesterday’ and ‘tomorrow’.\* Countdown to Christmas using an advent calendar.\* Share stories that have a time sequence, for example, Rosie’s Christmas Eve’ and talk about ‘in the morning’, ‘at lunchtime’, ‘after tea’ and ‘at bedtime’. | **Begin to describe a sequence of events.**\* Talk about patterns of events when cooking and baking on ‘foody Fridays’, for example, ‘first we add the flour, then the eggs and after that the sugar.’ | **Begin to describe a sequence of events.**\* When teaching the children how to brush their teeth as part of the oral health project, provide picture cards for the children to sequence and invite them to describe the correct sequence.\* Invite the children to talk about the sequence of events in stories, for example, ‘We’re Going on a Bear Hunt’ and ‘Handa’s Surprise’. |

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| **By the end of Nursery, pupils will be able to:*** Recite numbers beyond 5.
* Count up to 5 objects using 1:1 correspondence.
* Understand the last number reached is the total.
* Recognise three objects without counting.
* Represent numbers using fingers and their own symbols and marks.
* Write some numerals.
* Recognise and say when there is more/fewer.
* Recognise numerals to 5.
* Link numerals to amounts to 5.
* Name some 2D shapes – circle, square, rectangle, triangle.
* Name some 3D shapes – cube, cuboid, sphere, triangular prism, cylinder.
* Talk about some properties of 2D and 3D shapes such as, ‘corners’, ‘sides’, ‘straight’, ‘flat’, ‘round’.
* Select the appropriate shape for a particular task.
* Combine shapes to make new ones.
* Use comparative language when talking about the differences between objects in relation to size, weight, capacity, length and height.
* Measure using non-standard units, with support.
* Demonstrate an understanding of position.
* Use spatial language to describe a position, familiar route or location.
* Identify pattern in the immediate environment.
* Create and extend a simple repeating pattern, noticing and correcting errors where appropriate.
* Describe a simple sequence of events.
 | **Skills/Knowledge:*** Counting
* Understanding 1:1 correspondence
* Understanding cardinal principle
* Subitising
* Reading numerals
* Representing quantities
* Understanding more/fewer
* Linking numeral to amount
* 2D and 3D shape names and properties
* Spatial awareness
* Measuring
* Comparing
* Describing
* Observing
* Creating pattern
* Sequencing
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| **Continuous Provision:*** Patterns from different cultures, such as fabrics.
* Geo boards, shape tiles, pegboards, construction kits (lego, duplo), pattern making resources
* Block play
* Numerals, numeral cards, numeral displays, numbered resources
* Measuring equipment – tape measures, timers, jugs, measuring cylinders
* 2D and 3D shapes
* Resources to count and sort
* Board games
* Large dice
* Sequencing cards
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