(Mathematics) Scheme of Work

Reception – Autumn 1
Topic: All About Me

<table>
<tr><th>Activities</th><th>Intended Outcomes 3-4 year olds</th><th>Key Vocabulary and Questions</th></tr>
<tr><td rowspan="4">Counting activities to include:
Counting forward and back from 1-10 Counting using fingers (to support the concept of the number representing an amount)
Number rhymes, songs and stories e.g. Five Little Speckled Frogs 1,2,3,4,5, Once I Caught a Fish…
Counting using the children e.g. How many children are here today?
Counting the toys from Kipper’s Toybox
Add/take away 1 toy to one of the boxes. How many are there in the box now? Compare and listen to language.
Counts an arrangement of toys
Number of a set Kipper’s toys up 20. Put in correct order and add and subtract them.

Provide some strips of paper in different lengths and decorate them to look like snakes. Observe children as they talk about the comparative sizes of the snakes or measure them with cubes.
Set up a game which involves counting, such as ‘Hide-and-Seek’, to observe the children’s reciting of numbers

Identifying the shapes of Kipper’s Birthday presents.
Use 2D shapes to make a picture. Show a selection of ‘birthday items’ (football, book, birthday card, party plate, triangular napkin).
When children playing with bricks, other construction equipment listen for use of shape / pattern language/position language

Role play Toy Shop

Positional language. Through words alone. Where is Rosie now?</td><td rowspan="4">• Fast recognition of up to 3 objects, without having to count them individually (‘subitising’).
• Recite numbers past 5.
• Say one number for each item in order: 1,2,3,4,5.
• Know that the last number reached when counting a small set of objects tells you how many there are in total (‘cardinal principle’).
• Show ‘finger numbers’ up to 5.
• Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
• Experiment with their own symbols and marks as well as numerals.
• Solve real word mathematical problems with numbers up to 5.
• Compare quantities using language: ‘more that’, ‘fewer’, ‘than’.
• Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles, and cuboids) using informal and mathematical language ‘sides’, ‘corners’; ‘straight’, ‘flat’, ‘round’.
• Understand position through words alone – for example, “The bag is under the table,’ – with no pointing.</td><td>What number is that?
Can you name the shapes have you used?
Can you count……?
Number
triangle, square, circle, rectangle
3d Shapes</td></tr>
<tr><td>Assessment Opportunities</td></tr>
<tr><td>Can they find objects with a similar shape in their environment?
Can they make it 1 more/1 less?
Carry out baseline assessments and update Insight scores.</td></tr>
<tr><td>Resources</td></tr>
<tr><td></td><td></td><td>Simple maths games and puzzles to 5 and 10
Counters, small world toys, counting objects
2d shapes
Parcels from 3d shapes
Numicon
Pegs and boards

Kipper’s toybox and toys
Rosie and the fox</td></tr>
</table>

	• Describe s familiar route. • Discuss routes and locations, using words like ‘in front of’ and ‘behind’. • Make comparisons between objects relating to size, length, weight and capacity. • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. • Combine shapes to make new ones – an arch, a bigger triangle etc. • Talk about and identifies patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like ‘pointy’, ‘spotty’, ‘blobs’ etc. • Extend and create ABAB patterns -stick, leaf, stick, leaf. • Notice and correct an error in a repeating pattern. • Begin to describe a sequence of events, real or fictional, using words such as ‘first’ , ‘then…’	

(Mathematics) Scheme of Work

Reception – Autumn 2

Topic: Fantasy, Festivals and Food

Activities	Intended Outcomes 3-4 year olds	Key Vocabulary and Questions
Use the Ten Town stories and numbers to familiarise the children with the numerals 0-10. Encourage children to listen to and remember the rhyme associated with the formation of the number. Provide a range of different styles of numbers so that the children do not become too reliant on only the Ten Town Characters. Outside – say "Tia 10 wants you to find 10 natural objects, go!" Find a partner and check they have the right number of objects. Repeat with different Ten Town characters. Match Numicon to numbers • Show Twinkl Powerpoint All about number… • Watch Ten Town 1 song • Watch Pinkfong Number… song (You Tube) • Watch Cbeebies Number… song (Cbeebies) • Oxford Owl - Show Numicon, coins of that value (pennies or 2p, 5p, 10p), number card, number of pictures • Show the number on a Ten Frame https://apps.mathlearningcenter.org/number-frames/ (search for interactive ten frames). • Show the number on a Number Line • Count that number of objects, children, sounds (without children looking at the sounds you are making) • Be active – clap, jump, hop, high five partner that many times, touch that number of trees in the woods, collect that number of natural objects outside, make that number with children (get into 3's etc). • Draw that number of smiley faces on a whiteboard/write your name that number of times etc. • Practise writing the numeral (Ten Town on board, whiteboard, in the sand, paint…)	• Fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Recite numbers past 5. • Say one number for each item in order: 1,2,3,4,5. • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). • Show 'finger numbers' up to 5. • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals. • Solve real word mathematical problems with numbers up to 5. • Compare quantities using language: 'more that', 'fewer', 'than'. • Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles, and cuboids) using informal and mathematical language 'sides', 'corners'; 'straight', 'flat', 'round'.	What is the number of the day? What was the number of the day yesterday? What will the number be tomorrow? How do you know? What does the number of the day come before/after? Where do we put it on the number line? What does our number go between on the number line? Can we show 6 on a Ten Frame in any position or does it always have to be the same? If I move objects around, will it still be the same number? Why? How can we check? What do you know about the number of the day? **Assessment Opportunities** Tell me/show me all about the number…….. Update Insight scores **Resources** Ten Town Numicon Cubes Multilink Counting and sorting objects Pegs and boards

Show me 1 with your fingers. What do you know about 1? Can you find 1? Large piece of paper showing the children's findings for 1: photos, comments, objects ... Repeat with all numbers to 10. Using a variety of objects, ask children which group of objects has most/least/more/fewer. Count objects to check. Repeat with different amounts/objects. See Computing Scheme of Work for number/ shape/measures games. Mini Mash. Numbers and counting-Measuring games.	• Understand position through words alone – for example, "The bag is under the table,' – with no pointing. • Describe s familiar route. • Discuss routes and locations, using words like 'in front of' and 'behind'. • Make comparisons between objects relating to size, length, weight and capacity. • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. • Combine shapes to make new ones – an arch, a bigger triangle etc. • Talk about and identifies patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc. • Extend and create ABAB patterns -stick, leaf, stick, leaf. • Notice and correct an error in a repeating pattern. • Begin to describe a sequence of events, real or fictional, using words such as 'first' , 'then…'	Money Maths games and puzzles

(Mathematics) Scheme of Work

Reception – Spring 1
Topic: Me and My World

<table>
<tr><th>Activities</th><th>Intended Outcomes In Reception</th><th>Key Vocabulary and Questions</th></tr>
<tr><td>Counting
Counting to 20+
Count forwards and backwards.
Count children, chairs, legs, objects…
Count jumps, hops…
Count bangs on a drum…
Find numbers on a number line.
Go over each number on the number line counting forwards and backwards. Take a number away, which number is missing? How do you know? Take 2 numbers away, which numbers are missing? How do you know?
On fingers – show me 2, 6, 9, 10 etc. Can you show me 4 in a different way?
Paying to get on Naughty Bus.
Time
Describe a sequence of events, eg, Christmas Day using time vocabulary such as:
First, then, after, before, morning, afternoon, evening…

Practical activities to support children’s understanding of ‘more and fewer’.
Composition of numbers to 8
All numbers are made up of smaller parts.
Show children …….objects. How many are there? How can ……. be composed?
Bury eight red bricks and four blue bricks in sand. Children guess which colour there are most of. They dig up the bricks and count to check.
Arrange objects of two colours on the logs. Are there more yellow objects or more green objects? Count to check. Model the sentences
There are more green ……. There are fewer yellow ……
Frogs on a log.</td><td>• Count objects, actions and sounds.
• Subitise.
• Link the number symbol (numeral) with its cardinal number value.
• Count beyond ten.
• Compare numbers.
• Understand the ‘one more than/one less than’ relationship between consecutive numbers.
• Explore the composition of numbers to 10.
• Select, rotate and manipulate shapes in order to develop spatial reasoning skills
• Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
• Continue, copy and create repeating patterns.
• Compare length, weight and capacity.</td><td>How do you know? How can we check?
What do you notice?
Each tower has 1 more cube/1 less cube than the one before/ after it
Is there a different way?
Shortest, tallest ,longer, shorter
More than/less than
Assessment Opportunities
How can we make ……..?
How many more to make ……..?
Can you show how to make ……?
Can they sort the shapes and describe them?
Resources
Ten Town
Numicon
Cubes
Multilink
Counting and sorting objects
Ten frames
Counters
Maths games and puzzles
Beads and teddies
Repeating pattern cards</td></tr>
</table>

Shape – 2d/3d Place a number of different 2d /3d shapes on the carpet. Drive Naughty Bus to a shape and encourage children to say something about the shape. Patterns On flags Repeating patterns: Make a repeating pattern from bricks, beads, drawings... and ask children to continue the pattern. Describe the pattern, e.g. red, blue, red, blue. Make a new pattern. Length, weight and capacity Give the children an item and challenge them to find something heavier or lighter. Role play waiter/waitress and serve drinks in different sized containers. Provide containers of different shapes and sizes and investigate which one holds the most. Explore sand... different sized containers, spades and spoons. Height – tallest and shortest child. Measuring against lengths of ribbon or string See Computing Scheme of Work for number/ shape/measures games.		2d and 3d shapes... bricks Money Topmarks website WhiteRose website

(Mathematics) Scheme of Work

Reception – Spring 2
Topic: Where Shall We Go Today?

<table>
<tr><th>Activities</th><th>Intended Outcomes In Reception</th><th>Key Vocabulary and Questions</th></tr>
<tr><td rowspan="3">Counting to 20 forwards and backwards
Counting in 2s and 10s

Composition of numbers to 10
All numbers are made up of smaller parts.
Show children ……objects. How many are there? How can …… be composed?
Odds and evens – talk about odd and even numbers. Count in 2s starting from an even number... 2, 4, 6, 8, 10 and from an odd number... 1, 3, 5, 7, 9 -
Song- 10 green bottles
Number bond to 10 –song 1 and 9 make 10 etc..
10 frame showing bonds
Ducks in a 10 frame
Pots to 10

Provide children with a collection of things to sort. Compare quantities in each set.
Class book with doubling numbers on each page

Time
Find a minute timer. How many things can you do in a minute? How many smiley faces can you draw? How many jumps can you do? How many times can you write your name? Come up with some of your own challenges too.

Sorting 2d and 3d shapes.
Find shapes in their environment. Describe them.
Provide pictures of buildings- What shapes can you see?</td><td rowspan="3">Count objects, actions and sounds.
Subitise.
Link the number symbol (numeral) with its cardinal number value.
Count beyond ten.
Compare numbers.
Understand the ‘one more than/one less than’ relationship between consecutive numbers.
Explore the composition of numbers to 10.
Automatically recall number bonds for numbers 0-10.
Select, rotate and manipulate shapes in order to develop spatial reasoning skills
Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
Continue, copy and create repeating patterns.
Compare length, weight and capacity.</td><td>How do you know? How can we check?
What do you notice?
Can you go further? What do you notice about the pattern?
What day will it be in 2 days time? 3 days time?
Shortest, longest tallest</td></tr>
<tr><td>Assessment Opportunities</td></tr>
<tr><td>How can we make …….?
How many more to make …….?
Can you show how to make ……?
Update Insight scores</td></tr>
<tr><td>Resources</td><td>Numicon
Cubes
Multilink
Counting and sorting objects
Ten frames
Counters
Maths games and puzzles
Pegs and boards</td></tr>
</table>

Building models with 3d shapes. Collection of bricks in different sizes and shapes. Make the tallest tower possible using 10 bricks. Copy and continue movement patterns. Loose parts...make patterns with beads, buttons, sequins etc... Make a pattern with natural materials in the outside areas Patterns and symmetry on butterflies Height – tallest and shortest towers and flowers Measuring lengths of playdough snakes <u>Days of the week.</u> Recite. If it is Wednesday today, what day was it yesterday? What day will it be tomorrow? <u>Months of the year.</u> Who has a birthday in January/March/May etc. See Computing Scheme of Work for number/ shape/measures games.		2d and 3d shapes Topmarks website WhiteRose website

(Mathematics) Scheme of Work

Reception – Summer 1
Topic: How Do Things Grow?

Activities	Intended Outcomes In Reception	Key Vocabulary and Questions
<u>Consolidation</u> **Counting** Counting to 20, forwards ,backwards and missing numbers. Counting in 2s, 10s Find how many in a set **Subsitising** Dice,domino and bingo games to support regular practise of recognising small quantities. Comparison and matching games **Composition** Numicon...Larger can be made up of smaller. **Sorting and matching** Games that encourage noticing similarities and differences as they sort and match. **Comparing and ordering** Compare and order objects for quantities and measures. Noticing which has fewer, more or the same. **<u>New Learning</u>** Counting beyond 20 Adding more- using fingers Use 10 frames to represent numbers of things in stories eg: eggs from Odd Egg story Adding beans- Beanstalk stories Take away - using fingers Use number lines and 10 frames Race to zero Pass it on Take away beans- Beanstalk stories Song- currant buns Counting in 5s Sharing Jasper's beans fairly	• Count objects, actions and sounds. • Subitise. • Link the number symbol (numeral) with its cardinal number value. • Count beyond ten. • Compare numbers. • Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10. • Automatically recall number bonds for numbers 0-10. • Select, rotate and manipulate shapes in order to develop spatial reasoning skills • Compose and decompose shapes so that children recognise a shape can have other shapes *within* it, just as numbers can. • Continue, copy and create repeating patterns. • Compare length, weight and capacity.	How many altogether? What shape will you start with? How many triangles can you find? Who throws the furthest? Least far? What can we say about Jacks' throw compared to Jane's throw? What do you notice about the numbers in the song? **Assessment Opportunities** Can they see that doubling is the inverse of halving? Can they recall number bonds to 10? Send ELG data to county **Resources** Numicon Beans Cubes Multilink Counting and sorting objects Ten frames Counters Maths games and puzzles Dice

Games 10 frame fill game- 3 frames Numicon city Race to 20 Bingo Odd an even number Doubling and halving Sing the doubling song – Double 1 is 2, double 1 is 2, oh yes it really is, double 1 is 2 etc. Sing the halving song – Half of 10 is 5, half of 10 is 5, oh yes it really is, half of 10 is 5 etc. Show doubling and halving problem practically on carpet. Number bonds to 10 Measures - Distance outside How far can you throw a beanbag? Who can throw the furthest? Children in groups to compete against each other. Set up rules to make it fair and work out ways of measuring how far they throw. “Fe Fo Fi Fum there is lots of measuring to be done.” In pairs, how many things can you find that are longer than my footprints? Shorter? The same length? Measuring beanstalks. Who has the tallest beanstalk? How can we find out? Children to have different lengths of green paper then in small groups find out who has the longest/shortest. Can you put them into length order? Which is the longest/shortest? Measures - Money Recognising coins – 1p, 2p, 5p, 10p, 20p and understanding how many pennies each is worth. Play money games on Touchboard. Geo boards to make shapes Which shape doesn’t belong? Pattern blocks and make templates		Cuisenaire rods Patterns blocks and template cards. Geoboards Topmarks website NRich website WhiteRose website

Cutting right angled triangle to see triangles made up from Square tiles. Make rectangles and squares Tangrams Numicon fill the shape boards Design a quilt from Jack's House using shapes. Cuisenaire rods- comparing, putting together to make different lengths See Computing Scheme of Work for number/ shape/measures games.		

(Mathematics) Scheme of Work

Reception – Summer 2
Topic: Water and Waves

Activities	Intended Outcomes ELG	Key Vocabulary and Questions
<u>Consolidation</u> **Counting** Counting to 20, forwards, backwards and missing numbers. Counting in 2s, 5s and 10s Find how many in a set **Subsitising** Dice, dominoes and bingo games to support regular practise of recognising small quantities. Comparison and matching games **Composition** Numicon...Larger can be made up of smaller. **Sorting and matching** Games that encourage noticing similarities and differences as they sort and match. **Comparing and ordering** Compare and order objects for quantities and measures. Noticing which has fewer, more or the same. Counting beyond 20 Odd an even number Doubling and halving Sing the doubling song – Double 1 is 2, double 1 is 2, oh yes it really is, double 1 is 2 etc. Sing the halving song – Half of 10 is 5, half of 10 is 5, oh yes it really is, half of 10 is 5 etc. Show doubling and halving problem practically on carpet. Number bonds- Ping pong game Billy's Bucket story more/less	Number Have a deep understanding of number to 10, including the composition of each number; -Subitise (recognise quantities without counting) up to 5; -Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts Numerical Patterns Verbally count beyond 20, recognising the pattern of the counting system; -Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; -Explore and represent patterns within numbers up to 10, including events and odds, double facts and how quantities can be distributed easily.	What can you use to help you? How did you work it out? Can you check it another way? Can you count on? Can you count back? Which is the most popular? Which is the least popular? How many more votes for… than…? Look at different containers. Which will hold the most/ least amount of water? full, half full, empty. **Assessment Opportunities** What words can we use to talk about capacity? Why do you think that? How can you check? How can you order? Record final scores on Insight. **Resources** Numicon Cubes Multilink Counting and sorting objects Ten frames Counters Containers Maths games and puzzles

Addition and subtraction based on stories... 1. Commotion in the Ocean 2. Billy's Bucket 3. Pirates/ Mermaids Begin to record number sentences Mrs Lather's Laundry- Capacity. Different sized cups and containers Order identical bottles of water Various data collection activities Favourite colour, eye colour, ice cream flavour etc. Children to vote on their favourite. Each child to have an object to 'vote' with (cube/name etc). Ask child to place their object on the item which is their favourite. Positional language and ordering- Island in the Sun story Time Recite days of the week. What day comes after Monday? Before Thursday? Recite months of the year. Talk about seasons. Which months are in which season? Which season are we in now? How do you know? Mrs Lather's Laundry link to-days of the week Plan their ideal day Measuring round the trunk of a tree See Computing Scheme of Work for number/ shape/measures games. Assessments on Number and Numerical Patterns		Topmarks website NRich website White Rose website