Number, problem solving and reasoning

Number, problem solving and reasoning:

(Pre-formal: Cognition)

Intent:

- To be able to recognize money and exchange coins to pay for items through practice (Number)
- To add small numbers to others to become familiar with addition work (Number)
- To subtract small quantities from numbers up to 15. (Number)
- To be familiar with quantity variation terms including more, less, one and lots, related to quantities and volume/capacity (Number)
- To develop knowledge of 1:1 correspondence when counting (Number)
- To rote count, reliably count to a small given number and begin to write numerals (Number)
- To recognize numerals up to a small given number (Number)
- To record a number of items using a tally, pictogram, removal/addition of a Velcro picture or sound (E.g. beat of a drum) (Number)
- To develop familiarity with ordinal numbers, when used to record the finishing position in a race or height/length of items (Number)
- To group objects by a simple criterion (E.g. colour/size) and divide a whole into equal quantities/volumes (Number)
- To explore the properties of 2D and 3D shapes and begin to name a growing range (SSM)
- To achieve an understanding of object permanence (SSM)
- To be able to respond to and use directions (SSM)
- To explore volume and capacity using both solids and liquids (Filling, emptying, comparative language and measuring) (SSM)
- To have a varied vocabulary linked to size and comparison (SSM)
- To have knowledge and understanding of mass and weight and be able to compare length and height (SSM)
- To consider and compare position and relationships between objects using appropriate language (SSM)
- To demonstrate basic knowledge of time (SSM)
- To copy, create or continue a pattern (U&A)
- To sort and classify materials (U&A)
- To begin to estimate or predict in relation to quantity and size (U&A)

Implementation:

Content, order and skills to deliver a sequential, cumulative and coherent curriculum

E = Emerging   **D = Developing**   **S= Secure**   **C = Contextualised/Embedded**

Pre-formal (P1-4)	Semi-formal (PS4-6)	Formal (PS7 and above)
Cognition: **1.Awareness of stimuli –people, objects and activities:** •Recognise an obvious change happening very close to self e.g. stills when hand is massaged or when sees a bright flashing light •Recognise when a stimulus starts and stops e.g. stills, moves limbs, turns after the stimuli start or stop •Accept stimuli for an increasing amount of time e.g. will hold objects or allow feet to be in the foot spa •Respond to a widening range of stimuli e.g. turns to a range of flashing objects •Anticipate stimuli that occur over and over again e.g. smile before being pushed on a swing after several pushes •Respond to a range of stimuli that are quieter/less obvious e.g. smile at quiet singing •Attend to stimuli further away e.g. hears music a few feet away or smells lunch as the trolley comes in	**Maths:** Number: **Money** *Suggested Activities: Multiple opportunities to practise handling money in roleplay shopping environments and in public, including recognising numerals on coins, giving the correct quantity of coins to an adult, reliably counting with understanding of 1:1 correspondence. Stopping when correct quantity has been given, without 'clue' given in adult's tone of voice. Link to topic* E1 - Responds to give me more E2 - Recognises numeral 1 E3 - Shows an interest in counting and numbers E4 - Represents 1 ? shows one finger, points to one object, one nod of head E5 - Indicates one on request E6 - Indicates 2 on request D1 - Picks up more than one object when asked for 2 D2 - (RR Standard 1) Demonstrate an understanding of the concept of transaction (e.g. by exchanging a coin for an item, or one item for another, during role play activity) D3 - (RR Standard 2) Say the number names to 5 in the correct order (e.g. in a song or joining in with the teacher)	**Maths:** Number: **Money** *Suggested Activities: Multiple opportunities to practise handling money in roleplay shopping environments and in public, including recognising numerals on coins up to 8, giving the correct quantity of coins to an adult, reliably counting with understanding of 1:1 correspondence. Completing simple number sentences to create number bonds to 10 to give the correct quantity. Counting up to 20. Recognising the value displayed on a £5 and then a £10. Adding coins to notes to create the correct amount. Link to topic* S1 - Knows the last number counted represents the total size of the group S2 - (RR Standard 2) Demonstrate an understanding of the concept of numbers up to 5 by putting together the right number of objects when asked S3 - Counts out objects to 5 reliably S4 - Recognises numerals 1 - 5 S5 - Recognises numerals 1 - 8 S6 - Counts out objects to 10 C1 – Knows one more of a number up to 5 without practical support C2 – (RR Standard 3) Demonstrate an understanding that the last number counted represents the total number of the count C3 – Counts independently to 15.

•Transfers attention from one stimulus to another e.g. looks at jumping dog and when it finishes look at moving car •Attend stimuli in a busy classroom e.g. watch another child moving around •Locate a specific stimulus against a busy background e.g. find favourite toy in a box of several toys or turn to name in a noisy room •Persist in making simple toys do something e.g. keep swiping wobble toys or pressing a switch to keep the toy active **2. Exploration of objects, materials and substances:** •Use their senses to register interesting events around them e.g. listen to drum, watch moving toy, touch gloop •Locate moving stimuli e.g. track a florescent ball or moves head to sniff perfume as it passes from one side to another •Turns to objects and sounds that are activated but in one place e.g. turns head to locate flashing light •Makes things happen when they move randomly e.g. the space blanket crackles when the child wriggles or arm movement activates a hanging bell •Active toys that provide an interesting effect randomly and without connecting the cause to the effect e.g. pats a BigMac switch and something motivating happens or kicks the keyboard and sounds happen **3.Control of objects and materials** •Make things move deliberately with gross movement e.g. knock mobile, kick bells, swish water •Make things move deliberately with finer movements e.g. whole hand or head to activate switch or swipe objects that give a strong reward	D4 - Identify whether there are 1,2 or 3 objects in a group of objects D5 - Aware of numerals 1-5 D6 - Counts out 3 objects from group and stops **Addition** *Suggested Activities: Practising taking part in number songs and counting activities where one is added. Differentiation between one and lots/ making one and lots in sorting circles, progressing onto more and less. Recognising numerals up to 3 to take part in simple addition tasks. Link to topic* E1 – Enjoys helping to count objects E2 – Interacts with number songs E3 – Enjoys number songs and rhymes E4 – Supports an adult counting E5 – Counts when playing with numbers in any order E6 - Makes a group of one D1 – Makes a group of lots D2 – (RR Standard 1) Distinguish between 'one' and 'lots', when shown an example of a single object and a group of objects D3 –Demonstrate an understanding of the concept of more D4 – Counts to 3 correctly D5 – Requests for more to complete 1:1 matching D6 - Recognises numerals 1 - 3 consistently **Subtraction** *Suggested Activities: Practising taking part in number songs and counting activities where one is subtracted. Use of objects/Velcro communication strip to practise taking one away and posting into a box. Work with quantities up to 3, including counting items remaining, taking one away and counting again to assess how many are left* E1 –Says gone or all gone appropriately	C4 – (RR Standard 4) Count to 20, demonstrating that the next number in the count is one more and the previous number is one less C5 – To identify a number that is 1 more and 1 less up to 20 C6 - (RR Standard 4) To solve number problems involving addition of single digit numbers up to 10 **Addition** *Suggested Activities: Practising taking part in number songs and counting activities where one is added. Differentiation between one and lots/ making one and lots in sorting circles, progressing onto more and less. Recognising numerals up to 3 to take part in simple addition tasks. Link to topic* S1 –Recognises more in a range of practical situations S2 - Understands add means to put more in S2 – Understands add 1 more in practical situations S3 – Recounts when the amount has been changed S4 – (RR Standard 3) Use real life materials to add one to a group of objects and say how many are now present S5 – Recognises numerals 1 - 12 S6 - Sequences numerals to 10 consistently C1 – Recognises which group has more C2 – Recognises which group has less C3 –(RR Standard 4) Demonstrate an understanding of the symbols for add and equal to C4 - (RR Standard 4) Demonstrate an understanding of the commutative law e.g. 3+2=5, therefore 2+3=5 C5 – (RR Standard 4) To read and write numbers in numerals from 0 to 9 C6 - (RR Standard 4) Demonstrate an understanding of the composition of numbers to 5 and a developing ability to recall number bonds to and within 5 **Subtraction** *Suggested Activities: Practising taking part in number songs and counting activities where one is subtracted. Use of objects/Velcro communication strip to practise taking one away and posting into a box. Work with quantities up to 10, including counting items remaining, taking one away and counting again to assess how many are left. Begin to complete number sentences using – and = signs. Practise counting backwards from 10 to assess how many remain*

•Persist in making simple toys do something e.g. keep swiping wobble toys or pressing a switch to keep the toy active •Operate a toy that requires a single action e.g. button on Jack-in-the-box, switch the bubble tube •Activate toys deliberately, using different movement for different toys e.g. shaking bells and banging drum •Shift attention between different objects/actions e.g. actions on an activity centre •Manipulate objects purposely e.g. empty and fill containers, stacking blocks •Press buttons to make toy work e.g. keyboard, musical toys •Look for favourite objects in a box of similar items not deliberately hidden •Open containers to find objects e.g. lift lid, press buttons, pull top off •Use objects and materials according to their function e.g. brush for hair, shoes on feet, and paint on paper. **4. Sequence qnd pattern:** •Take turns in repetitive games where the adult stops to wait for a response e.g. Intensive interaction, action songs •Anticipate routine events ie see a pattern in the event e.g. action songs, eating, being hoisted •Recognise familiar places e.g. look up at the lights in the sensory room, go straight to a favourite object in the hall •Explore objects that are used in familiar routines e.g. spoon, cup, hair brush, drum •Take turns actively, e.g. rolling ball to partner, passing objects backwards and forwards •Choose between two or more motivating toys •Respond to an object cue e.g. sits down for a drink when sees cup	E2 – Will give only one from a group when asked for one E3 – Interacts with number songs E4 – Enjoys number songs and rhymes E5 – Takes objects out of a container E6 - Takes object out of container when requested D1 – Joins in with familiar number rhymes with some accuracy D2 – Represents amounts 1 and 2 D3 – Joins in with number rhymes when encouraged D4 – Responds to how many? D5 – Counts to 3 correctly D6 - Identify whether there are 1,2 or 3 objects in a group of objects **Quantity/volume variation (one and lots, more and less).** *Suggested activities: Pratise filling and emptying containers, indicating which contains more and which contains less. Compare differently sized/shaped containers to see which holds the most liquid/rice/sand. Ask for more using a sign, symbol or verbal word. Begin to comment upon one and lots. Use more and less in relation to weight as well as quantity (Which is more heavy? Could include use of weighing scales). Link to topic* E1 –Fills containers E2 – Empties containers E3 – Responds to give me more E4 – Says gone or all gone appropriately E5 – Makes a group of one E6 - Makes a group of lots D1 – (RR Standard 1) Distinguish between 'one' and 'lots', when shown an example of a single object and a group of objects D2 – Places objects in a container	S1 –Recognises less where the difference is great in practical situations S2 – Counts objects when asked how many reliably S3 – Says how many in a group up to 5. S4 – Begin to count when asked how many S5 – (RR Standard 3) Use real life materials to subtract 1 from a group of objects and say how many are now present S6 - Joins in counting backwards from 10 C1 – (RR Standard 3) Identify how many objects there are in a group of up to 10 objects, recognising smaller group on sight and counting the objects in larger groups up to 10. C2 – Match the numerals 0-9 to groups of objects C3 –(RR Standard 4) Count to 20, demonstrating that the next number in the count is one more and the previous number is one less C4 – (RR Standard 4) Demonstrate an understanding of the symbols for subtract and equal to C5 – To identify a number that is 1 more and 1 less up to 20 C6 - (RR Standard 4) To solve number problems involving subtraction of single digit numbers up to 10 **Quantity/volume variation (more and less, full and empty, larger and smaller, same)** *Suggested activities: Practise filling and emptying containers, demonstrating ability to indicate more and less. Practise adding one. Make use of 'full' and 'empty' language. Practise identifying larger and smaller groups. Compare differently sized/shaped containers to see which holds the most liquid/rice/sand. Identify more, less, bigger and smaller in relation to numbers. Practise understanding that the total remains the same with no subtraction/addition. Identify items which can be weighed using scales. Link to topic* S1 – Understands zero means none S2 – Recognises more in a range of practical situations S3 – Recognises less where the difference is great in practical situations (E.g. less quantity, or less heavy) S4 – Understands add 1 more in practical situations S5 – States if a container is full or empty S6 - (RR Standard 3) Identify how many objects there are in a group of up to 10 objects, recognising smaller group on sight and counting the objects in larger groups up to 10. C1 – Identify the larger and smaller group of 2 sets of objects C2 – Recognises which group has more or less

•Select appropriate resources for a familiar routine •Operate toys that require more than one action to complete e.g. bubble tube controlled by latched switch, CD player knobs •Operate toys that need to be pulled apart and put together e.g. stickle bricks, Duplo •Follow objects that move within the toy e.g. cars down a slope, balls in a tube •Put objects into a container one at a time e.g. balls down a tube •Select preferred objects from a mixture of objects e.g. in a box •Look at the bottom of a sliding/tumbling toy for the object to appear when it can't be seen travelling down •Use objects that require two or more actions to complete e.g. posting shapes •Use early problem solving for a familiar event e.g. selecting a car or ball to roll down the slope rather than a piece of material or paper •Solve simple problems where understanding the pattern is important e.g. when there are 4 pegs to a toy and 3 are in place, look for the fourth if out of sight.	D3 –Demonstrate an understanding of the concept of more D4 – Requests for more to complete 1:1 matching D5 – Aware when there is too many for 1:1 matching and ceases task D6 - Experiment with heavy and light where the difference is marked (Relating to more and less) **Counting & 1:1 correspondence** *Suggested Activities: Practise giving out items so that each person/teddy bear has one item. Start with just enough items for a small, group, and extend by providing more items than are required. Move from 1:1 corresponds onto matching quantities up to three to the correct numerals and naming them correctly. Link to topic. Make use of objects such as counting bears/plastic fruits/others.* E1 -Enjoys helping to count objects E2 - Assists with one to one matching i.e. cups on saucers E3 - Recognises numeral 1 E4 - Represents 1, shows one finger, points to one object, one nod of head E5 - Indicates one on request E6 - Makes a group of one D1 - (RR Standard 1) Demonstrate an understanding of the concept of 1:1 correspondence D2 - Helps with 1:1 matching e.g. give each bear a hat D3 - Aware when there is too many for 1:1 matching and ceases task D4 - Consistently completes 1:1 matching i.e. each teddy gets a hat D5 - Identify whether there are 1,2 or 3 objects in a group of objects D6 - Matches numerals 1 - 3 to a quantity **Numeral recognition & quantity matching**	C3 – To identify a number that is 1 more and 1 less up to 20 C4 – (RR Standard 4) Demonstrate an understanding that the number of objects remains the same when they are rearranged, providing nothing has been added or taken away and an understanding the total number of objects changes when objects are added or taken away C5 – To identify the biggest or smallest number from two numbers to 20 C6 - To identify objects we can measure using scales **Counting & 1:1 correspondence** *Suggested Activities: Practise giving out items so that each person/teddy bear has up to 5 items each. Practise counting on from a given number with and without the use of a number line. Estimate how many are in a small group and then check. Practise creating number bonds up to 5. Practise counting up to 20 independently, and rote counting up to30. Link to topic. Make use of objects such as counting bears/plastic fruits/others. Counting Skittles knocked over in a game. Rote counting along to a song (e.g. Have fun teaching songs on YouTube)* S1 - Joins in rote counting to 10 S2 - (RR Standard 2) Demonstrate an understanding of the concept of numbers up to 5 by putting together the right number of objects when asked S3 - Counts out objects to 5 reliably S4 - Matches quantities to 5 to numerals S5 - Joins in rote counting to 20 S6 - Finds requested number on a number line C1 - Count on from any given number up to 10 C2 - Estimate how many in a small group (up to 7) and check estimations by counting C3 - (RR Standard 4) To read and write numbers in numerals from 0 to 9 C4 - (RR Standard 4) Demonstrate an understanding of the composition of numbers to 5 and a developing ability to recall number bonds to and within 5 C5 – To rote count from 20-30 C6 – To count independently to 20 **Numeral recognition & quantity matching**

Suggested Activities: Creation of sensory numbers, tracing numbers on screen, on paper or using a magnetic board (E.g. lakeshore ball bearing numbers for tracing). Creation of the numeral using pegs in a peg board, or adding correct number of dots to a ladybird. Tracing numerals in sand/messy substances. Finding numerals hidden around the classroom/school and naming them. Matching magnetic numbers to correct number of counters. Completing numeral inset puzzles, naming numerals. Bingo based around early numbers. Hopscotch. Recording the score in a game of bowling.	*Suggested Activities: Creation of sensory numbers, tracing numbers on screen, on paper or using a magnetic board (E.g. lakeshore ball bearing numbers for tracing). Creation of the numeral using pegs in a peg board, or adding correct number of dots to a ladybird. Tracing numerals in sand/messy substances. Finding numerals hidden around the classroom/school and naming them. Matching magnetic numbers to correct number of counters. Completing numeral inset puzzles, naming numerals. Bingo based around early numbers. Hopscotch. Recording the score in a game of bowling.*
E1 - Recognises numeral 1 E2 - Interacts with number songs E3 - Enjoys helping to count objects E4 - Assists with one to one matching i.e. cups on saucers E5 - Recognises 1 and 2 E6 - Represents amounts 1 and 2 D1 - Picks up more than one object when asked for 2 D2 - Joins in with familiar number rhymes with some accuracy D3 - Aware of numerals 1-5 D4 - Sequences numerals 1 -3 D5 - Understands 0 = none D6 - Recognises numerals 1 - 3 consistently	S1 - Recognises numerals 1 - 5 S2 – Matches quantities to 5 to numerals S3 - Understands zero means none S4 - Says how many in a group up to 5. S5 - Recognises numerals 1 - 8 S6 - Recognises numerals 1 - 12 C1 - Sequences numerals to 10 consistently C2 - Finds requested number on a number line C3 - (RR Standard 4) To read and write numbers in numerals from 0 to 9 C4 - To recognise numerals 12-30 C5 – To write (hand or computer) numbers 11-20 C6 – Reliably matches numerals to 10 to the correct quantity.
Indicating/Recording Quantities *Suggested Activities: Taking away a frog/monkey/flying saucer from a communication board during a number song, representing a small number using beats or shakes of a musical instrument. Throwing items at a target to record a number (1:1 correspondence practice). Recording the result of a game such as skittles or hop scotch using magnetic tokens, a tally or a numeral. Making a numeral out of straws to represent a quantity. Indicating a numeral on an aided language display. Recording positions in a car race/running race or assault course using ordinal numbers. Beginning to overwrite and then copy numerals*	**Indicating/Recording Quantities (Including Ordinal numbers)** *Suggested Activities: Taking away a frog/monkey/flying saucer from a communication board during a number song, representing a small number using beats or shakes of a musical instrument. Throwing items at a target to record a number (1:1 correspondence practice). Recording the result of a game such as skittles or hop scotch using magnetic tokens, a tally or a numeral. Completing a 'survey' in school/class linked to eye/hair colour, pets or favourite foods and recording results using a tally chart, bar chart or pictogram. Making a numeral out of straws to represent a quantity. Indicating a numeral on an aided language display. Recording positions in a car race/running race or assault course using ordinal numbers. Writing numerals up to 9 and then up to 20.*
E1 - Represents 1, shows one finger, points to one object, one nod of head E2 - Says numbers in any order E3 - Supports an adult counting	S1 - (RR Standard 2) Demonstrate an understanding of the concept of numbers up to 5 by putting together the right number of objects when asked

E4 - Shows an interest in counting and numbers	S2 – Counts objects when asked how many reliably
E5 - Indicates one on request	S3 - Says how many in a group up to 5.
E6 - Indicates 2 on request	S4 - Recognises numerals 1 - 5
D1 - Represents amounts 1 and 2	S5 - Match the numerals 0-9 to groups of objects
D2 - Joins in with familiar number rhymes with some accuracy	S6 - Counts out objects to 10
D3 - (RR Standard 2) Say the number names to 5 in the correct order (e.g. in a song or joining in with the teacher)	C1 - Sequences numerals to 10 consistently
	C2 - Uses ordinal numbers 1st, 2nd, 3rd
	C3 - Put up to 20 items into groups of 2 or 5
	C4 - To sequence numbers to 20
D4 - Matches numerals 1 - 3 to a quantity	C5 - (RR Standard 4) To read and write numbers in numerals from 0 to 9
D5 - Responds to how many?	
D6 - Joins in with number rhymes when encouraged	C6 – To write (hand or computer) numbers 11-20

Grouping of objects (Type of object and size)

Suggested Activities: Practice making sets of objects linked to size. Group into sorting circles. Label as big or small, and then branch out using varied language for size comparison. Match items of the same or very similar size together. Move around the classroom to find shapes or different sizes, or symbols to practise language linked to big and small. Groups different types of objects (e.g. bananas, apples and grapes, in three separate bowls)

E1 - Group similar objects together e.g. put all cars in the garage and all animals on the farm
E2 - Assists with one to one matching i.e. cups on saucers
E3 - Matches objects regardless of size
E4 - Match objects in relation to size i.e. place the big balls into the net and all the small balls into the bucket, with a correctly sized object already present
E5 - Makes a group of lots
E6 - (RR Standard 1) Distinguish between 'one' and 'lots', when shown an example of a single object and a group of objects
D1 – Identify big and small when there is a marked difference
D2 - Makes sets with the same amount in each container
D3 - Counts out 3 objects from group and stops
D4 - (RR Standard 2) Identify the big or small object from a selection of two
D5 - Sort by given criteria - type of objects

Grouping of objects (Type of object/shape and size)

Suggested Activities: Practice making sets of objects linked to size. Group into sorting circles. Label as big or small, and then branch out using varied language for size comparison (e.g large and tiny). Count quantity of items in each group. Name the shape of the items, and acknowledge that they are all triangles despite being different sizes. Begin to recognise smaller group quantities by sight/estimate the amount up to a total of 7 in a group. Organise a large group into smaller sets, practising simple division. Compare groups using biggest, smallest, more and less. Begin to make equal groups.

S1 - Beginning to count groups over 5
S2 – Recognises shapes regardless of size
S3 - Sorts by size with less difference between sizes
S4 - Give size name when asked how big
S5 - (RR Standard 3) Identify how many objects there are in a group of up to 10 objects, recognising smaller group on sight and counting the objects in larger groups up to 10.
S6 - Identify the larger and smaller group of 2 sets of objects
C1 - (RR Standard 3) Use real life materials to add one or subtract one to/from a group of objects and say how many are now present
C2 - States biggest and selects smallest out of a selection of object
C3 - Recognises which group has less and which has more
C4 - Estimate how many in a small group (up to 7) and check estimations by counting
C5 – Matches the numerals 0-9 to groups of objects
C6 – Put up to 20 items into groups of 2 or 5

D6 - Sorts by size where the contrast is obvious

Shape space and measure:

2D shape
Suggested Activities: Going on a shape hunt around school, searching for shapes in messy substances and naming them, making 2D shape pictures using plastic/magnetic shapes. Using a symbol to name a shape. Learning 2D shape names through use of Switch-it Jigsaw/YouTube song. Handling shapes, including taking them out of containers, butting them back in and experimenting with how many will fit in different containers or how they go together. Walking/running/skipping/jumping in the shape of shapes drawn. Making a picture out of shapes on a computer/ipad screen. Shape bingo – Relating to shape name, colour, etc.

E1 - Handles shapes
E2 – Looks for object (Shape) once it has been hidden
E3 - Will identify where they want an object (Shape) placed
E4 - Enjoys playing with construction materials (2d Shapes)
E5 - Aware of familiar objects normal place
E6 - Places object (Shape) in a container when requested
D1 - Identifies if something is in or out of a container
D2 - Uses shapes to make pictures
D3 - Experiments with putting shapes into shape sorter
D4 - Matches 2D shapes circle, square, triangle, including from a choice of 3 or 4
D5 - Uses basic shape names not always correctly
D6 - Matches practical shape to photograph

Object permanence and Direction
Suggested Activities: Object Permanence – Looking for an object which has been hidden in a predictable place. Searching in a small range of places where the object might have been placed (e.g. under one of 3 cups.

Shape space and measure:

2D shape
Suggested Activities: Going on a shape hunt around school, searching for shapes in messy substances and naming them, making 2D shape pictures using plastic/magnetic shapes. Using a symbol to name a shape. Learning 2D shape names through use of Switch-it Jigsaw/YouTube song. Handling shapes, including taking them out of containers, butting them back in and experimenting with how many will fit in different containers or how they go together. Making shapes out of straws/pipe cleaners, with varying sizes etc. Differentiating 2D shapes from 3D shapes. Drawing large shapes using chalk. Walking/running/skipping/jumping in the shape of shapes drawn. Making a picture out of shapes on a computer/ipad screen. Classifying shapes in terms of numbers of sides and corners. Shape bingo – Relating to shape name, colour, curved or straight sides, number of corners, etc.
S1 - Selects a specific shape by name circle, triangle , square
S2 - Recognises shapes regardless of size
S3 - Recognises shapes regardless of colour
S4 - Understands terms straight and round/curved
S5 - Recognise square, triangle, circle, rectangle
S6 - Recognise triangles regardless of type (equilateral, isosceles, scalene, right angled)- not by name
C1 - Explore pentagons and hexagons
C2 - Recognise shapes within the environment. Copy a shape picture
C3 – Copy and complete a pattern using shapes
C4 - (RR Standard 4) Recognise some common 2D shapes
C5 - To match pictures of shapes to actual shapes
C6 - To sort 2D from 3D shapes

Directions/Speed
Suggested Activities: Working with Beebots, become familiar with language associated with directions, in addition to icons/arrows which influence movement in a specific direction. Practice using the controls, and programming the device to move a defined number of

Emptying and filling containers. Looking for objects in their normal places. Directional work – Begin to make an object move (or move body to music) in the directions/speeds identified below. E1 - Looks for object once it has been hidden (Witnessed and unwitnessed) E2 - Tracks a falling object E3 - Will identify where they want an object placed E4 - Empties containers E5 - Aware of familiar objects normal place E6 - Places objects in a container D1 - Takes objects out of a container D2 - Places object in or out of a container when requested D3 - Looks for own items if not in normal place D4 - Responds to movement terms fast and slow D5 - Responds to directional terms up and down D6 - Copy a simple movement pattern	*steps in set directions (Link to following instructions). Begin to problem solve moving through a sequence of steps to reach a target. Begin to identify left and right (i.e. turn left). Make use of practising ball skills outside/in circle time to practise altering the speed at which an object is moving. Practise moving fast and slow to dance to music. Develop knowledge of moving in different directions at start of lesson by moving in a defined direction to music during the starter activity.* S1 – Moves forwards or backwards S2 – Can demonstrate moving fast or slow S3 – Moves from side to side. S4 - States if object is moving forward, backward, fast or slow S5 – Causes and object to move in a direction – forwards or backwards S6 – Causes an object to move at a speed – Fast or slow C1 – Causes an object to move a defined number of steps in a direction (E.g. 3 steps/squares forward, 2 steps/squares backwards) C2 – To respond to directional icons (arrows) which point in differing directions C3 – To problem solve causing an object/device to move through a sequence of steps in the correct direction to meet a target. C4 - To move in different directions C5 - To identify left C6 – To identify right
Volume & Capacity *Suggested Activities: Exploring the capacity of a range of differently sized and shaped containers using a range of materials (including sand, water, jelly baff, plastic cubes, rice and other objects). Practising emptying and filling activities and using vocabulary including in, out, full, empty, not full, almost full/empty. Experiments with placing really large and small items in really large/small bags/boxes to develop a better understanding of capacity.* E1 - Fills containers E2 - Empties containers E3 - Will give only one from a group when asked for one (e.g. one item from a container) E4 - Aware if container is empty E5 - Places objects in and takes objects out of containers	**Volume & Capacity** *Suggested Activities: expand on range of vocabulary used to also encompass: not full, almost full/empty. Make use of an expanding range of positional language to describe where objects/items are in relation to their containers. Ask pupils to place the items in the correct places. Describe and order containers in terms of their size, having attempted to pour items between containers. Start to use comparative terms such as almost, nearly, very, not and enough. Starting to read measurements of volume using numbers up to 10 on a measuring jug (pouring to the correct amount) and then to begin to use standard measurement units (e.g. pouring to one litre)* S1 - States if a container is full or empty S2 - Understands terms in, on, under, next to S3 - Sorts by size (Containers) S4 - Gives size a name when asked how big S5 - Orders 4 objects by size (Containers)

E6 - Places object in and takes objects out of a container when requested D1 - Recognise big containers can fit in lots or big items D2 - Recognise small containers fit small items but not big items D3 - Recognises signs/symbols/words in, on and under D4 - Demonstrates an understanding of in, on and under D5 – Demonstrates understanding of full D6 – Demonstrates understanding of empty	S6 – States biggest and smallest out of a selection of containers C1 - Handle 3D shapes including containers and objects to place inside C2 - Use ordinal language to describe position (E.g. 2nd biggest, 3rd biggest) C3 - To identify objects/materials we can measure using a measuring jug C4 – Begin to use basic numerals on the side of a measuring jug to measure a volume of liquid (e.g. numerals 1-5) C5 – To use increased comparative language to compare volume held, including almost or nearly full or empty, and not full and not empty. C6 – To begin to measure using standard units for capacity and volume such as ml, cl or l.
3D shape *Suggested Activities: Building models from 3D shapes, 'naming' shapes (using own name), counting their numbers of faces, corners and edges. Experimenting with 3D net shapes. Searching for shapes hidden in messy substances or in bags/boxes which require simple problem solving skills to open. Experimenting with shapes which will roll or not role. Sorting shapes in terms of size. Finding everyday items which are a range of 3D shapes – Exploring their properties.* E1 - Handles shapes E2 – Matches objects regardless of size. E3 - Enjoys playing with construction materials (3D Shapes), knocks down bricks E4 - Rolls cylinders and spheres E5 - Matches 2 colours (of 3D shapes) E6 - Responds to find the same D1 - Where there is a marked difference identify big D2 - Where there is marked difference identify small D3 - Handles a range of 3D shapes D4 - Rolls 3D objects D5 - Understands small as little D6 - Understands large as big	**3D shape** *Suggested Activities: Building models from 3D shapes, 'naming' shapes (using own name), counting their numbers of faces, corners and edges. Experimenting with 3D net shapes. Searching for shapes hidden in messy substances or in bags/boxes which require simple problem solving skills to open. Experimenting with shapes which will roll or not role. Sorting shapes in terms of size. Finding everyday items which are a range of 3D shapes – Exploring their properties. Starting to name some 3D shapes using correct name – verbally or using symbols* S1 - Recognises shapes regardless of size S2 - Recognises shapes regardless of colour S3 - Matches practical shape to symbol S4 - Give shape name when asked what shape S5 - To identify the odd one out from a choice of 2 and then 4 S6 - Handle 3D shapes C1 - Recognise shapes within the environment C2 - Recognises colours - red, blue, green and yellow of shapes C3 - To explore which 3D shapes roll C4 - To identify difference between 2D and 3D shapes C5 - To sort 2D from 3D shapes C6 - (RR Standard 5) Name some common 3D shapes from a group of shapes or from pictures of the shapes and describe some of their properties

Size comparison and ordering	Size comparison and ordering
Suggested Activities: Stacking and building using items of differing sizes, exploring relationship/position (e.g. will a very large cube stack on top of a tiny one?). Grouping items into big and small where there is a clearly marked difference. Experimenting with placing items of different sizes into differing containers (Bags and boxes). Practise using varying language for big and small as identified below. Sorting items by size. Copying a pattern of differently sized items (e.g. small, medium, large)	*Suggested Activities: Starting to order objects by size, starting with 3 and building up to 6 and beyond. Use of wide ranging, comparative language to place items in the correct order. Use of ordinal numbers, e.g. 2nd and 3rd biggest or smallest. Placing items which ascend in height/size in order and practising placing less predictable items in order of size. Stacking and building using items of differing sizes, exploring relationship/position (e.g. will a very large cube stack on top of a tiny one? Which ones is the smallest?). Grouping items into biggest and smallest where there is a clearly marked difference, with a third 'middle sized' category. Experimenting with placing items of different sizes into differing containers (Bags and boxes) and using varied language for the size. Practise using varying language for big and small as identified below. Sorting items by size.*
E1 - Matches objects regardless of size	S1 - Orders 3 objects by size
E2 - Match objects in relation to size i.e. place the big balls into the net and all the small balls into the bucket, with a correctly sized object already present	S2 - Give size name when asked how big
E3 - Enjoys playing with construction materials	S3 – Recognises shape regardless of size.
E4 - Will identify where they want an object placed	S4 - (RR Standard 2) Sort objects according to a stated characteristic
E5 - Where there is a marked difference identify big	S5 - Identify the larger and smaller group of 2 sets of objects
E6 - Where there is marked difference identify small	S6 - Orders 4 objects by size
D1 - Uses language big and small (not always correctly)	C1 - States biggest and smallest out of a selection of object
D2 - Recognise big containers can fit in lots of big items and that small containers fit small items but not big items	C2 - To identify smallest and biggest from a selection of pictures
D3 - (RR Standard 2) Identify the big or small object from a selection of two	C3 - To order 6 objects by size
D4 - Understands small as little and large as big	C4 – To begin to use more varied language, such as massive, tiny, huge, miniscule, giant, petite.
D5 - Sorts by size	C5 – Orders objects from biggest to smallest and smallest to biggest.
D6 - Copy a simple size pattern	C6 – Finds the item which is 2nd or 3rd biggest or smallest, demonstrating increased understanding of ordinal numbers.

Mass and weight	Mass and weight
Suggested Activities: Holding and attempting to move/slide/pull items of differing weights. Dropping light and heavy items to see what happens. Recognising items which are too heavy to move. Use of heavy and light symbols. Ordering items in terms of weight and finding items of similar weights.	*Suggested Activities: Sorting items into heavy and light, ordering from heaviest to lightest. Testing what can be picked up using a range of tools. Use of balance scales to identify heavy or light items, balancing the scales and changing the weight on each side. Uses ordinal language to describe which is the heaviest/lightest item. Use of scales to measure in grams or kilograms and use of items such as bean bags to say how heavy an item is (By balancing the scales)*
E1 - Handles shapes of differing weights	

E2 - Tracks falling objects of different weights to see what happens when they fall E3 - Anticipate an action i.e. falling bricks, jack in the box, item breaking E4 – Experiments with items which can and cannot be picked up E5 - Plays with water or sand, including objects of differing weights in the water and sand. E6 - Separates objects where difference is great i.e. cars and food, in terms of mass D1 - Matches symbols for heavy and light D2 - Solve simple problems relating to weight e.g. finding another way to move something heavy, by asking an adult, two person lift or using a wheelbarrow/dragging the item on a sheet. D3 - Orders 3 objects by size in terms of weight D4 - Finds 2 the same size in terms of weight D5 - Practically from a choice of 2 identifies light object D6 - Practically from a choice of 2 identifies heavy object	S1 – Starting to sort items into heavy and light where there is a marked difference S2 – Starts to order 4 items from heaviest to lightest. S3 – Predicts what will be light or heavy S4 – Knows that some items are too heavy to pick-up, even with help S5 – experiences picking up/attempting to pick up a range of heavy and light items using tools such as tweezers, a fork or on a plate S6 - To identify objects we can measure using scales C1 - Recognises which item is heavier when placed on a set of balance scales. C2 – Understands how to make the lightest side of the balance scales heavier C3 – Uses ordinal language to describe 2nd and 3rd heaviest or lightest C4 – Attempts to balance scales in terms of weight. C5 – To measure and record using non-standard units of weight/mass C6 - To measure and record using standard units for length, weight/mass, capacity/volume
Length and height *Suggested Activities: Building towers of differing heights (including both short and tall), measuring height. Comparing heights of people in class. Connecting cubes to create long and short shapes horizontally and tall and short towers vertically. Using comparative language to compare the lengths/heights of differing towers. Measuring shapes using uniform units of measurement (e.g. counting how many cubes or lego bricks long an object linked to the termly topic is. Running long or short distances. Placing items long or short distances away. Stating whether the distance travelled was long or short. Development of language including high, low, tall, short, long, big and small. Throwing objects to test who can throw the furthest. Checking who can jump the highest. Pull back cars to see which travels the furthest in a race.* E1 - Matches objects regardless of size (Length) E2 - Supports an adult counting to measure length/height in coloured squares	**Length and height** *Suggested Activities: Building towers of differing heights (including both short and tall), measuring height. Comparing heights of people in class. Connecting cubes to create long and short shapes horizontally and tall and short towers vertically. Using comparative language to compare the lengths/heights of differing towers. Measuring shapes using uniform units of measurement (e.g. counting how many cubes or lego bricks long an object linked to the termly topic is. Running long or short distances. Placing items long or short distances away. Stating whether the distance travelled was long or short. Development of language including high, low, tall, short, long, big and small. Throwing objects to test who can throw the furthest. Checking who can jump the highest. Pull back cars to see which travels the furthest in a race. Connecting straws/pipe cleaners/string together to make something longer where it is too short.* S1 - Recognises object long and short where the difference is great S2 - Responds to key vocabulary linked to length and height S3 – States whether distance travelled was long or short

E3 - Responds to give me more (e.g. to build a taller tower) E4 - Repeats an action for effect E5 - Uses language big and small (not always correctly), relating to length and height E6 - Recognises big and small where difference is great D1 - Solve simple problems e.g. connecting shapes together to build a tower D2 – Counts shapes to measure an item. D3 - Responds to how many? D4 - Handles a range of 3D shapes to measure length and height D5 - (RR Standard 2) Identify the big or small object from a selection of two D6 - Orders 3 objects by size	S4 – Starting to use comparative language such as longest and shortest. S5 - Uses ordinal numbers 1st, 2nd, 3rd to describe the longest distance travelled in a car race S6 - Make estimates in length i.e. how many hand spans across the table C1 - To identify objects we can measure using a ruler C2 – To compare length C3 – To measure using non-standard units of length C4 – To measure and record using standard units of length (cms up to 15) C5 -To solve practical problems for length (E.g. making something longer) C6 - To solve simple word problems for length

Position and relationship

Suggested activities: Those which encompass experimentation with a range of items which can be stacked, joined together, nest inside each other and place inside each other. (E.g. sorting items which connect together in different ways). Sorting into differing containers. Matching items which go together. Coverage of positional language such as in, on, inside, next to. Placing shapes inside. Shape sorter or slotting shapes/balls into tubes. Experimenting with which will/will not role down a chute. Building and demolishing structures using magnetic shapes. Completing simple jobs which involve matching items, such as pairing shoes or setting a table.

E1 - Bangs two objects together
E2 - Rolls a ball
E3 - Locate source of sound
E4 - Presses switch to activate an object
E5 - Matches similar pictures
E6 - Recognise big containers can fit in lots or big items
D1 - Recognise small containers fit small items but not big items
D2 - Solve simple problems e.g. make sure the box is big enough to fit the item
D3 - Experiments with putting shapes into shape sorter

Position and relationship

Suggested activities: Those which encompass experimentation with a range of items which can be stacked, joined together, nest inside each other and place inside each other. (E.g. sorting items which connect together in different ways) Sorting into differing containers/by colour.. Matching items which go together. Coverage of positional language such as in, on, inside, next to. Placing shapes inside. Shape sorter or slotting shapes/balls into tubes. Experimenting with which will/will not role down a chute. Building and demolishing structures using magnetic shapes. Completing simple jobs which involve matching items, such as pairing shoes or setting a table.

S1 - Directs to stop when there is enough
S2 - Sorts by colour - 2
S3 - Sorts by shape
S4 - Recognises obvious error in a group
S5 - Match pairs of socks
S6 - Rotate pieces to fit into a jigsaw/puzzle
C1 - Use mathematical language (positional) in problem solving situation - set tables for a picnic
C2 - Plays with picture dominoes
C3 - To explore which 3D shapes roll
C4 - To identify difference between 2D and 3D shapes
C5 - To order 6 objects by size

D4 - Matches related objects i.e. knife and fork, socks and shoes D5 - Sort by given criteria - type of objects D6 – Match pairs of objects and pictures to objects	C6 - To create own patterns with three colours **Time** *Suggested activities: Naming days of the week through word/sign/symbol. Naming months of the year. Using a visual timetable to sequence events typically associated with differing times of day, in home or at school. Beginning to use a clock face to imitate and then remember o clock and half past times. Ability to draw those times onto a clock face. Starting to be able to complete quarter turns – first with own body and then moving onto a clock face.* S1 - Begin to use names of days of the week (may not be correct) S2 - To name any 4 days of the week S3 - To name any 6 months of a year S4 - To identify something they do in the morning S5 - To identify something they do during the day S6 - To identify something they do at night time C1 - To name all days of the week and sequence events for each day C2 - To name all the months of the year C3 - To tell the time to o'clock and half past the hour C4 - To draw hands on a clock face for o'clock and half past the hour C5 - To make a full turn, half turn, quarter turn and three quarter turn C6 - To move clockwise and anti-clockwise
Using and applying: **Patterns** *Suggested activities: Recognising patterns in different ways and beginning to join in with them (e.g. a pattern of sound played on a drum, a pattern of 1 key words which follow each others. Anticipating a known action, e.g. The pattern of a drum roll always leading to an exciting event such as an 'explosion' of colour or sound, falling bricks, a jack in the box or touch screen activity. Matching items which are the same. Beginning to copy movement, colour size or object patterns, where there is one stage (e.g.*	**Using and applying:** **Patterns** *Suggested activities: Copying and repeating a simple pattern of real life objects, sounds or colours. Start with a pattern of 2 and build up to completing patterns of up to 4 items and then beyond. Copying a pattern of 2D or 3D shapes, and then learning to complete the pattern. Devising own patterns with 2-3 colours and using them in work. Copying patterns in different ways, e.g. paint printing, objects, shapes, colours/sizes of shapes. Beginning to work on patterns with more than one criterion – (e.g. big red triangle, small*

matching big to big, one colour to the same colour, one object to the same object or repeating a repetitive movement). Having mastered this, begin to work towards two stage patterns.

E1 - Anticipate an action i.e. falling bricks, jack in the box
E2 - Presses switch to activate an object
E3 - Knocks down bricks
E4 - Repeats an action for effect
E5 - Matches 2 colours
E6 - Responds to find the same
D1 - Matches colour from 2
D2 - Matches symbols
D3 - Copy a simple movement pattern
D4 - Copy a simple colour pattern
D5 - Copy a simple size pattern
D6 - Copy a simple object pattern

Classification/sorting (Type of object/Colour/Shape)
Suggested Activities: Filling and emptying containers to develop a concept of placing items together. Matching items with are identical or very similar. Matching shapes. Beginning to sort by colour from a choice of two where colours are identical. Matching large to large and small to small.

E1 - Fills containers
E2 - Empties containers
E3 - Rolls cylinders and spheres
E4 - Match objects in relation to size i.e. place the big balls into the net and all the small balls into the bucket, with a correctly sized object already present
E5 - Matches similar pictures
E6 - Matches symbols
D1 - Makes sets with the same amount in each container
D2 - Matches colour from 2
D3 - Finds 2 the same size
D4 - Matches 2D shapes circle, square, triangle
D5 - Sort by given criteria - colour (2),
Matches 4 colours

blue triangle, big purple triangle, then repeated), where there is a variety of sized and coloured triangles to choose from.

S1 - Matches practical shape to symbol
S2 - Sorts by type e.g. shoes and socks
S3 - (RR Standard 2) Copy and continue simple patterns using real life materials e.g. apple, orange, apple, orange
S4 - Copy a 2 stage repeated pattern of colour
S5 - Pupils complete a 2 stage repeating pattern
S6 - (RR Standard 3) Copy and continue more advanced patterns using real life materials e.g. apple, apple, orange, apple, apple, orange
C1 - Pupils copy a 3 stage repeated pattern
C2 - Copy a pattern using shapes
C3 - Complete a pattern using shapes
C4 - To continue a 4 stage repeated pattern
C5 - To create own pattern with two colours
C6 - To create own patterns with three colours

Classification/sorting (Type of object/Colour/Shape)
Suggested Activities: Sorting activities involving grouping items into grouping circles/containers/bags. Create a game (e.g. throwing coloured balls or foam shapes into the correct place. Starting to group items by similarity where they are not identical e.g. different tones of a colour or shapes of differing sizes. Sorting items according to their uses or properties.

S1 - Sorts by colour in a familiar or different environment
S2 - Sorts by type e.g. shoes and socks
S3 - Sorts by shape
S4 – Sorts by colour where colours are not identical (I.e. differing tones of colours)
S5 - Identify shapes within a picture
S6 – Sorts by type where items are not identical
C1 – Shorts by shape where shapes are differing sizes and colours.
C2 – Sorts by use (E.g. something I can eat, something I can wear, something I can play with)
C3 - To sort 2D from 3D shapes
C4 – Sorts shapes by other properties (E.g. will/will not roll, or curved sides or straight sides)

	D6 – Sorts by size or type of object	C5 – Classifies items from most to least (E.g. most red to least red, or most square to least square) C6 – Classifies items by more than one criterion

Impact:

How we measure whether the implementation of the curriculum achieves our intent statements

- Learning walks
- Book Trawls
- Lesson Observations
- Drop-ins by SLT
- Subject Coordinator Scrutiny (For awareness – Subject coordinators are not accountable for progress)
- Progress data & Target Setting
- Termly Progress Meeting with actions set
- Next Steps
- Formative Assessment (Work samples, written observations on progress sheets and photographs)
- Moderation of work
- End of year Reports (Academic)
- Annual Reviews of the pupil's EHCP
- Parent Workshops, Questionnaires & Parents Evenings
- Class team meetings and Phase Meetings
- Teacher and TA Appraisal
- Ofsted Inspections
- School Improvement Partner involvement in T&L Monitoring
- BEP/Local feedback on curriculum content
- Discussion of Curriculum at SLT Meetings
- Use of CPD time to review curriculum and agree ways forward
- Staff confidence questionnaires in teaching skills
- SLT Leadership and Management of the curriculum
- Teacher involvement in choosing motivating topics to gauge pupils' interests
- Robust monitoring of pupils' opportunities to take part in reading activities to read widely and often
- Assessment using WS P Steps, AET Progression Framework and Scales of Engagement