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| NC Subject Maths | Number Place value | Addition and Subtraction | Multiplication and division |
| Step 1Supported and modelled | Reacts to changes of amounts when those amounts are significant (More than double).  | **Reacts to number work in a social context.( Learning through play).** **Giving each toy a cube / car / cake etc.****‘Do they want more?’ Giving another cube etc modelled.** **Stem sentence work.** | **Watch and copy****Fill boxes with equal amounts.****Share amounts between toys or friends.****Use stem sentences to encourage the use of language.****Discrete model/ copy/ repeat** |
| Step 2 | May be aware of number names through their enjoyment of action rhymes and songs that relate to numbers.Look for things that have moved out of sight. **Begin to count following and copying teacher.****Match a number card to a real amount of objects to 0-5****Listen, copy and practice maths language related to value and amount.** | **Begin to watch others or staff and join in finger rhymes naming numbers.****With support reacts to changes of amounts in a group of up to 5.****Listen, copy and practice maths language related to adding and subtracting.****Practice saying and recognising numbers in digits and words.****Use real life situations to reinforce more, less and the same.** | **Watch and copy****e.g Fill boxes with equal amounts.****Put three cakes in each tin.****Put four flowers in each vase.****Share 4 sweets with a friend.****Share 3 cubes with three toys.****Listen, copy and practice maths language involved in sharing and multiplying.** |
| Step 3 | **Comparison*** Responds to words like lots or more.

**Counting*** Says some counting words.
* May engage in counting-like behaviour, making sounds and pointing and saying some numbers in sequence.
* **Begin to copy counting and practice adding on 1 with support to 5+**
* **Begins to become familiar by hearing language related to place value.**
* **More, less same equal (modelled and supported)**
* **Jumps on a number line.**
* **Playing a game using a counter.**
 | **Cardinality*** Uses number words, like one or two and sometimes responds accurately when asked to give one or two things.
* **Begins to add one to an amount.**

 **Can you put one more in each tub?’*** **Takes away one from each amount.**
* **Repeat in different real life situations.**
 | **Fill boxes with equal amounts.****Put three dogs in each kennel.****Put four flowers in each vase.****How many dogs in two kennels?****Put the same number of counters in each tub.****Listen, copy and practice maths language involved in sharing and multiplying.** |
| Step 4 | Comparison• Beginning to compare and recognise changes in numbers of things, using words like more, lots of or ‘same’. Counting• Begins to say numbers in order, some of which are in the right order (ordinarily). • Beginning to notice numerals (number symbols). • Beginning to count on their fingers. Number s to (5)-10 | **Cardinality**• In everyday situations, take or give two or three objects from a group.**Using practical apparatus:****Begin to add two numbers together to make 5.****Using practical apparatus begin to subtract numbers from 5.****Begin to match number names to digits.** | **Begin to be aware of how many….****e.g wheels on each car.****How many legs on each teddy?****How many legs on each dog?****Draw pictures and represent the legs and wheels etc through their own mark making.****Begin to recognise same and different.****They all have two legs etc.** |
| Step 5 | **Comparison*** Compares two small groups of up to five /**10** objects, saying when there are the same number of objects in each group e.g. You’ve got 2, I’ve got two. Same! **Equal**
* **Focus on the language of maths. Stem sentences to reinforce understanding.**
* **Show more cubes say ‘more’ etc**
* **Show less cubes say ‘less’.**

**Counting*** May enjoy counting verbally as far verbally as far as they can go.
* Points or touches (tags)each item, saying one number for each item, using the stable order 1, 2, 3, 4, 5.
* Uses some number names and number language within play, and may show fascination with large numbers.
* Begins to recognise numbers 0 to **10+**.

**Composition*** Through play and exploration, beginning to learn that the numbers are made up (composed) of smaller numbers.
* Beginning to use understanding of number to solve practical problems in play meaningful activities.
* Beginning to recognise that each counting number is one more than the one before.
* **Transition support: Begins to count to 20+**
 | **Cardinality**• Subitises one, two, three **-five** objects without counting. • Counts up five **to 10** items, recognising that the last number said represents the total counted so far (cardinal principle). • Link numerals with amounts up to 5 /**10** and maybe beyond. * • Explores using a range of their own marks and signs to which they ascribe mathematical meanings.
* Separates a group of **3-10** objects in different ways, beginning to recognise that the total is still the same.
* **Engages in subitising numbers to 10**
* **With support begins to use the symbols for addition, subtraction and equal.**
* **Relates addition and subtraction to real life situations.**
* **To play shop and link addition and subtraction.**
 | **Begins to talk more confidently about amounts being equal and what is fair.****With support:****Can share an amount between two boxes.****Can share a given amount between three boxes.****Can share an unequal amount between three boxes and recognise when the amount is unequal or not fair.****e.g Can match two socks in each washing basket or put on each person.****Discussion: Can work out how many people could travel in three cars etc.****Can line up cubes / pens etc in sets of two.****Can line up cubes in sets of three.** **Begins to talk about the amount made or total**  |
| Step 6 | **Comparison*** Uses number names and symbols when comparing numbers, showing interest in large numbers.
* Estimate of numbers of things, showing understanding of relative size.

**Counting*** Enjoy reciting numbers from 0 -2**0+** (and beyond) and back from 2**0+-0**.
* Increasingly confident at putting numerals in order **0-20**+ (ordinality).
* Counts out up to 10**-20+** objects from a
* larger group.
* Matches the numeral with a group of items to show how many there are (up to **20+**).

**Composition*** Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects.
* Begins to conceptually subitise larger numbers by subitising smaller numbers, e.g. sees six raisins on a plate as three and three.
* **Counts forwards and backwards to 30.**

**Recognises with support the number of tens in each digit to 30** | **Cardinality****Engages in subitising numbers to 0 to 20*** In practical activities, add one and subtracts one with numbers to 10 **-20**
* **Engages in adding more than one to a number 0to 20.**
* **Engages in subtracting more than one to a number to 20.**
* Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and + or –
* **Begins to add on and count forwards and backwards to 20+**

**With support and practical apparatus.****Counts independently to 20+****Relates learning to real life scenarios.****Shopping****Transition: Support using numbers to 30** | **Begin to line up counters in sets of 2,5,10 and add this information to a number line** **Begins to count in 2’s 5’s 10’s with support/ practical apparatus.****Begins to link sets of……… with real life maths.** **E.g how many shoes on two people. Draw and count.****How many wheels on 5 cars?****How many legs on four dogs?****Begins to share given amounts between 2,3 and 4 groups.****Begins to recognise equal sets.****Begins to use symbols for x and division.****Can share in role play.** |
| Step 7 In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, ‘have a go’, talk to adults and peers about what they notice and not be afraid to make mistakes. | NumberChildren at the expected level of development will: - Have a deep understanding of number **0 to 50+**, including the composition of each number; **with a deeper understanding of composition to 20 to 50+****Subitise up to 20** Numerical PatternsChildren at the expected level of development will: - •Verbally count beyond (20) to **50+**, recognising the pattern of the counting system;•Compare quantities up to (10) **-50+** 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 (10)**- 50+**, including evens and odds, double facts and how quantities can be distributed equally. | Automatically recall (without reference to rhymes, counting or other aids) number bonds to **20** (including subtraction facts) and including double facts.**Using addition and subtraction symbols work on:****Fact families to 20** **Adding doubles to 20****Halving numbers to 20****Adding numbers to 20+ on a number line.****(use practical resources, number line/ hundred square/ cubes numicon).****Subtraction facts to 20 related to bonds.****Counting on and back using a number line.****Counting back across a boundary using a number line.****Introduction to base ten.****Problem solving: one and two step problems using practical apparatus.****Begin to understand and work on a calculation with a missing digit.** | **Modelled and supported****STEM sentences / manipulation of equipment. Outward thinking. (T/ TA to share thinking with pupils.****Develop :****Counting in 10’s forwards and backwards Counting in 2’s forwards and backwards.****Counting in 5’s forwards and backwards.****Create practical number lines using apparatus to reinforce understanding.****Relate information to a paper number line.****Using practical equipment with support (modelled, stem sentences and manipulation of equipment by teacher / TA): work on fact families within the 2 and 5, x tables.****e.g 2x4=8** **4x2=8** **8÷2=4** **8÷4=2****Begin to copy counting in ten.** **Make bunches of ten with paper straws / counters / buttons etc.****Work on simple problems involving x and division.****Learn language related to x and division.****Simple problems involving x and division.****.** |
| Year 1 | Number: Number & Place Valuecount to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number•count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens•given a number, identify one more and one less•identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least•read and write numbers from 1 to 20 in numerals and words | Number: Addition & Subtractionread, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs•represent and use number bonds and related subtraction facts within 20•add and subtract one-digit and two-digit numbers to 20, including zero•Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9. | Number: Multiplication & DivisionSolve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. |

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| NC Subject Maths | Fractions | Time | Money |
| Step 1 | **Teacher models language during play.** | Begin to predict what happens next in predictable situations. | **Role play** |
| Step 2 | **Teacher models language during play.** |  | **Role play** |
| Step 3 | **Teacher models language during play.** | Beginning to understand that things might happen now or another time, in routines. | **Role Play** |
| Step 4 | **Teacher models language during play.** | Beginning to understand some talk about immediate past and future. Beginning to anticipate times of the day such as mealtimes or home time. | **Role play Shop** |
| Step 5 | **Modelled and supported by the teacher / TA** **Talking and showing a whole apple / cake/ biscuit/book.****Sharing cubes or sweets etc talking about is it fair?**  | Recalls a sequence of events in everyday life and stories.**Draw pictures or match pictures of events.****Play with clocks and begin to develop language related to moving the clock.****This is 3 o clock and show on clock** | **Role play: playing shop.** **Language development talking maths related to shop and buying.****‘How much?’** **Look and talk about coins / notes. Feel and handle them.** **Talk about how they feel what they look like.****Look and draw coins used in UK system.****Complete coin rubbings to notice what value or picture is on each coin.** |
| Step 6 | **Begin to recognise ‘Wholeness’****Have you got them all?****Is there a complete set of cubes?****It it a complete apple?****It is a complete piece of paper?****Begin to recognise and talk with support about half.****‘ let’s break the cookie in half’****Can you do it?****Can you colour half of the flower? etc** | Is increasingly able to order and sequence events using everyday language related to time.**Draw or sequence a morning in school.****Draw or sequence an afternoon at home.****Draw or sequence an evening including bedtime.****Draw or sequence brushing your teeth.** • Beginning to experience measuring time with timers and calendars.**Find how many times you can jump in 1 minute.****Find how many cubes you can put together in thirty seconds.****Look at pictures of ‘ real life clocks’ and devices where we can tell the time.** | **Use cubes to show the value of coins.****Maths language: Focus on stem sentence development that used language related to money.****Using plastic money to 10p begin to realise that each coin has a different value.****Talk about the coins and show using cubes / numicon what the values are.****e.g 5p 5 cubes** |
| Step 7 | **Talk about:****What does equal mean?****What does fair mean?****How do we know?****Show half a cake.****With support and modelling use a fraction board to work out half and quarter of shapes and simple amounts.** | **Recognise and recall days of the week.****Recognise and recall months of the year.****Recognise and recall the seasons.****Draws their day in time order explaining what they do and when.****Sequences five step + pictures of events and scenarios.****Uses a clock to show the 0’clock.****Talks about what happens during the day at different times.****Begin to work on showing times and half past on a clock.** | **Recognise and use coins in role play with some understanding of value.****Begin to add and subtract coins to 20+****3p+5p=****10p-6p=****Recognise and name coins and notes.****Notice how much things cost in the real world.****Where does money come from?****How can we get it?****Practise giving change from up to 50p****Create a shopping list and work out a total.****Work out the total of three coins.****e.g 2p+1p+5p=** |
| Year 1 | Number: FractionsRecognise, find and name a half as one of two equal parts of an object, shape or quantityRecognise, find and name a quarter as one of four equal parts of an object, shape or quantity | Compare, describe and solve practical problems fortime [for example, quicker, slower, earlier, later]Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]Recognise and use language relating to dates, including days of the week, weeks, months and yearsMeasure and begin to record the following: time (hours, minutes, seconds)Tell the time to the hour and half past the hour and draw the hands on a clock face to show these timesTell the time to the hour and half past the hour and draw the hands on a clock face to show these times | Recognise and know the value of different denominations of coins and notes |
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| NC Subject Maths | Measure / Length height | Measure / Capacity | Measure / Weight / mass |
| Step 1 | Explore differently sized and shaped objects. | Explore differently sized and shaped objects. | Explore differently sized and shaped objects. |
| Step 2 | Shows an interest in objects of contrasting sizes in meaningful contexts.  | Get to know and enjoy daily routine. Shows an interest in emptying containers. | Shows an interest in objects of contrasting sizes in meaningful contexts. |
| Step 3 | Shows an interest in size and weight. | Shows an interest in size and weight. Explores capacity by selecting, filling and emptying containers, e.g. fitting toys in pram.  | Shows an interest in size and weight. |
| Step 4 | Explore differences in size, length**Put the objects in order starting with the shortest to the longest with support.****Put the objects in order starting with the longest to the shortest.****Teacher/ TA support stem sentences and direct modelling** | Explore differences in weight and capacity. **Put the objects in order starting with the one that can hold the least to the one that can hole the most.****Put the objects in order starting with the one that can hold the most to the least.****Teacher/ TA support stem sentences and direct modelling** | Explore differences in weight and capacity. **Put the objects in order starting with the lightest to the heaviest with support.****Put the objects in order starting with the heaviest to the lightest** **Teacher/ TA support stem sentences and direct modelling** |
| Step 5 | In meaningful contexts find the longer or shorter**Using real life explore longer and shorter.****Order real life objects: draw around a selection of objects and decide which is longer and shorter and encourage discussion to support what these terms mean.****Pick from a set of objects the longest and shortest.****Encourage discussion and use of maths vocabulary.** **Stem sentences.** | Measures In meaningful contexts find the more/less full of two items. **Using real life explore which holds more and less.****Order real life objects: draw around a selection of objects and decide which would hold more or less, encourage discussion to support what these terms mean.****Pick from a set of objects the longest and shortest.****Encourage discussion and use of maths vocabulary.** **Stem sentences.** | In meaningful contexts find the heavier or lighter**Use observation****Holding objects****Human scale with hands****Compare and describe a range of objects saying which is heavier.****Use a balance scale to explore different objects and their weight/ mass.****Non-standard measure.****Encourage discussion and use of maths vocabulary.** **Stem sentences.** |
| Step 6 | Enjoys tackling problems involving prediction and discussion of comparisons of length paying attention to fairness and accuracy. Becomes familiar with measuring tools in everyday experiences and play.**Revision and repetition of Step 5****Encourage discussion and use of maths vocabulary.** **Stem sentences****Introduce non-standard and standard units when pupil shows interest and is aware of the differences.** **.**  | Measures • Enjoys tackling problems involving prediction and discussion of comparisons of capacity, paying attention to fairness and accuracy. **Revision and repetition of Step 5** **Encourage discussion and use of maths vocabulary.** **Stem sentences** | Enjoys tackling problems involving prediction and discussion of comparisons of weight or paying attention to fairness and accuracy.**Revision and repetition of Step 5****Encourage discussion and use of maths vocabulary.** **Stem sentences** |
| Step 7 | **Introduce the ruler. Talk about standard and non-standard units of measure** **Notice, recognise and respond to standard units of measure.****Compare 5 items for length practically.****Fred is e.g 12 pencils long. Sally is 10 pencils long. Then repeat using cm and m.****Encourage children to measure with support ten items in the classroom.** **Describe using maths language two or objects for length (visually) making predictions that can then be tested using cubes etc.****e.g The doll is longer than the car but not as long as the umbrella.****Respond to problems related to length.****e.g Cut a strip of paper four squares long. Now cut me one longer and shorter. How many squares could they be?** | **Introduce non-standard and standard units when pupil shows interest and is aware of the differences.****Compare 5 items for capacity practically.****Notice, recognise and respond to standard units of measure.****Describe 2 objects visually making predictions that can be checked practically. The teapot will hold more than the cup.****Respond to problems related to capacity.****Use water trays and tubs to fill a variety of objects and show which holds more and less.****e.g I’ve got to carry all the water in the jug in a different container. Which one should I choose?**  | **Introduce non-standard and standard units when pupil shows interest and is aware of the differences.****Compare 5 items for weight / mass practically.****Notice, recognise and respond to standard units of measure.****Describe 2 objects visually making a prediction of which can then be checked practically.****Respond to problems related to weight.****e.g Which bag is the heaviest?** **How could we check?****Use weighing scales to compare objects.** |
| Year 1 | MeasurementCompare, describe and solve practical problems for:lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]Time [for example, quicker, slower, earlier, later]Measure and begin to record the following: lengths and heights | Capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]Measure and begin to record the following: lengths and heights; mass/weight; capacity | Mass/weight [for example, heavy/light, heavier than, lighter than] |

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| NC Subject Maths | Geometry Shape Pattern | Geometry position and direction | Problem solving |
| Step 1 | Shape• Explore differently sized and shaped objects. • Beginning to put objects of similar shapes inside others and take them out again. •  | Spatial Awareness• Explores space when they are free to move, roll and stretch. • Developing an awareness of their own bodies, that their body has different parts and where these are in relation to each other.  | Pattern:• Show interest in patterned songs and rhymes, perhaps with repeated actions. • Experiences patterned objects and images. Begin to predict what happens next in predictable situations. |
| Step 2 | Shape• Stacks objects using flat surfaces. • Responds to changes of shape.• Attempts, sometimes successfully, to fit shapes into spaces on inset boards or jigsaw puzzles.  | Spatial Awareness• Explores space around them and engages with position, direction, such as pointing to where they would like to go.  | Pattern:• Joins in with repeated actions in songs and stories. • Initiates and continues repeated actions |
| Step 3 | Shape• Pushes objects through different shaped holes, and attempts to fit shapes into spaces on inset boards or puzzles. • Beginning to select a shape for a specific purpose. • Enjoys using blocks to create their own simple structures and arrangements.  | Spatial Awareness• Enjoys filling and emptying containers. • Investigates fitting themselves inside and moving through spaces. | Pattern:• Becoming familiar with patterns in daily routines. • Joins in with and predicts what comes next in a story or rhyme. • Beginning to arrange items in their own patterns, e.g. lining up toys. |
| Step 4 |  Shape• Chooses puzzle pieces and tries to fit them in. • Recognise that two objects have the same shape. • Makes simple constructions. • Is interested in what happens next using the patterns of everyday routines. | Spatial Awareness• Moves their bodies and toys around objects and explores fitting into spaces Begins to remember their way around a familiar environment. • Responds to some spatial and positional language. • Explores how things look from different viewpoints including things that are near and things that are near or far away. .  | Pattern:• Joins in and anticipates repeated sounds and action patterns.  |
| Step 5 | Shape• Chooses items based on their shape which are appropriate for the child’s purpose. • Responds to both informal language and common shape names. • Shows awareness of shape similarities and differences between objects. • Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes. • Attempting to create arches and enclosures when building, using trial and improvement to select blocks. . • Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next.  | Spatial Awareness• Responds to and uses language of position and direction. • Predicts, moves and rotates objects to fit the space or create the shape they would like.  | Pattern:• Creates their own spatial patterns showing some organisation or regularity. • Explores and adds to simple linear patterns of two or three repeating items e.g. stick, leaf (AB) or stick, leaf, stone (ABC). • Beginning to use understanding of number to solve practical problems in play meaningful activities. |
| Step 6 | Shape • Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes • Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes • Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build. | Spatial Awareness • Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints.• Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning).• May enjoy making simple maps of familiar and imaginative environments, with landmarks.  | Pattern • Spots patterns in the environment, beginning to identify the pattern “rule.” • Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat. |
| Step 7 | **Working towards naming 2d and 3d shapes: circle square rectangle triangle+****Plays matching games. Matching names or properties. to images of the shapes.****Sorting activities related to shape and real-life objects.****Use Lego and construction kits to make shapes and objects.****Draw shapes with an aim for accuracy.****Consider shapes in a range of positions and presentations.****Look at shapes in the real world.****Windows doors equipment items within a house or school.** | **Discuss compass positions and directions.****Play games where children jump to face North South East and West.****Create a treasure map showing position of different landmarks on squared paper. (simple co-ordinates)****Play orienteering games where position and direction is modelled.****Stem sentences to include position language.****Take photos of real life objects from different positions.** | **Develop more complex pattern work.****Use cubes, peg boards and squared paper to create, continue and recreate a pattern.****Use a wide range of problem solving including ‘spot how many?’****Mazes.****Spot the difference.****Making and constructing models.****Problems that include ‘ thinking outside the box’****Real life problems.** |
| Year 1 | Geometry: Properties of ShapesRecognise and name common 2-D and 3-D shapes, including:2-D shapes [for example, rectangles (including squares), circles and triangles]3-D shapes [for example, cuboids (including cubes), pyramids and spheres]Geometry: Position & Direction | Geometry: Position & Direction.Describe position, direction and movement, including whole, half, quarter and three-quarter turns. |  |
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STEPS

When teaching mathematics through the STEPS phases it is very important to recognise and consider the child in light of their needs, environment, family situation and developmental stage. (Speech and language, ability to manipulate themselves as well as resources and objects).

Practical resources are paramount and should be used whenever possible to support learning.

Real life scenarios encourage an awareness of the world around them.

Stem sentences: Teacher models the correct responses for children to copy.

Outward thinking: Teacher speaks aloud what they are thinking and how they would solve a problem or calculation, situation.

Encourage and support ‘Outward thinking’.

Parents / carers may need extra support to help them to understand the approach to maths or language used etc. to help them support their child at home.

During Steps it is expected that …

The teacher or TA would be heavily supporting, modelling and extending thoughts and learning.

Teacher / TA using, modelling and extending the use of maths language and language of interaction.

Praise and rewards are given for good input and engagement.

The pedagogy employed in Maths at NC level is used at STEPS and that teachers and TA’s are aware of this.

Children are given the chance to work independently and get things wrong so that learning becomes meaningful.

The setting

Be creative

Encourage speech

Word building

Expression

Engagement

Self- worth

Self – belief

Independence

Confidence

Fun

Happiness